DOCUMENT RESUME

ED 036 477 SP 003 563

AUTHOR	MAYESKE, GEORGE W.; AND OTHERS
TITLE	A STUDY OF OUR NATION'S SCHOOLS. A WORKING PAPER.
INSTITUTION	OFFICE OF EDUCATION (DHEW), WASHINGTON, D.C.
PUB DATE	69
NOTE	909P.
EDRS PRICE	EDRS PRICE MF-$3.50 HC-$45.55
DESCRIPTORS	*ACADEMIC ACHIEVEMENT, ADMINISTRATOR CHARACTERISTICS, EDUCATIONAL FACILITIES, EDUCATIONAL PROGRAMS, *MINORITY GROUPS, SCHOOL PERSONNEL, SCHOOL POLICY, *SCHOOLS, SOCIAL BACKGROUND, *SOCIOECONOMIC INFLUENCES, *STUDENT ATTITUDES, STUDENTS, TEACHER CHARACTERISTICS

ABSTRACT

A STUDY OF EDUCATIONAL OPPORTUNITIES OF MINORITY GROUPS WAS CONDUCTED TO DISCOVER WHAT CHARACTERISTICS OF THE NATION'S SCHOOLS ARE MOST CLOSELY RELATED TO SCHOOL OUTCOMES. DATA CAME FROM A 1965 SURVEY COMMISSIONED BY CONGRESS. A 5 PERCENT STRATIFIED CLUSTER SAMPLE, FROM THE NATION'S PUBLIC ELEMENTARY AND SECONDARY SCHOOLS, WAS USED TO SELECT THE SUBJECTS: ABOUT 650,000 STUDENTS (OVER 40 PERCENT FROM MINORITY GROUPS) FROM 4,000 SCHOOLS WITH THEIR TEACHERS, PRINCIPALS, AND SUPERINTENDENTS. TEST AND QUESTIONNAIRE ITEMS WERE GROUPED INTO INDICES THAT WERE DIVIDED INTO THREE GROUPS: STUDENT'S SOCIAL BACKGROUND, SCHOOL'S CHARACTERISTICS, AND SCHOOL'S OUTCOMES. REGRESSION ANALYSIS AND PARTITION OF MULTIPLE CORRELATION WERE USED TO PURSUE THE MAIN QUESTIONS. MAJOR FINDINGS: THE INFLUENCE OF THE SCHOOL CANNOT BE SEPARATED FROM THAT OF THE STUDENT'S SOCIAL BACKGROUND AND VICE VERSA. SCHOOLS EXERT A GREATER INFLUENCE, IN TERMS OF BOTH ATTITUDE AND ACHIEVEMENT, ON STUDENTS WHO HAVE RELATIVELY HIGH SOCIOECONOMIC STATUS, ARE EITHER WHITE OR ORIENTAL-AMERICAN, AND COME FROM HOMES WHERE BOTH PARENTS ARE STILL LIVING TOGETHER. A SCHOOL'S PHYSICAL FACILITIES SEEM UNIMPORTANT COMPARED WITH ITS PERSONNEL. THE MOST IMPORTANT PERSONNEL CHARACTERISTIC IS EXPERIENCE OF RACIALLY IMBALANCED EDUCATIONAL SETTINGS. SCHOOL OUTCOMES BECOME INCREASINGLY RELATED TO THE 31 SCHOOL INDICES THE LONGER THE STUDENT STAYS IN SCHOOL. (COMPLETE FINDINGS AND SUPPORTING DATA ARE INCLUDED.) (JS)

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A STUDY OF OUR NATION'S SCHOOLS

by

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This working paper presents the results of an inquiry into the role that our nation's public schools play in the development of the achievement and motivational levels of their students. Information on students and schools was taken from the Educational Opportunities Survey. A number of new techniniques have been employed to demonstrate school influences.

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
Office of Education

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SP003563

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PREFACE

This report has two main purposes: (1) to serve as a reference source by summarizing and displaying structural properties of the data (2) to show the extent to which the structural properties of the data will permit answers to be obtained about the possible influences that schools may have on their students. No attempt is made here to integrate these results with findings from other studies. For this, a separate work is needed. Meanwhile, the reader is referred to the reviews of the literature on school achievement by Lyle (1967) and Dyer (1968), and to the publications of the American Educational Research Association. The literature on desegregation research has been reviewed by Weinberg (1968) and that on social factors in learning by Boocock (1966).

It should also be pointed out that this report is addressed in the first instance to research personnel engaged in studying school influences. We therefore included Chapter 1, to show what importance we feel our findings have for those who are not researchers. The same findings are summarized at somewhat greater length in Chapter 11. Chapter 11 contains the technical support for Chapter 1 and Chapters 2 through 10 contain the technical support for Chapter 11. The Appendices contain the supporting data and exposition of some of the techniques used in these more technical chapters.

There are two other reports in preparation which utilize this same data base (i.e. the Educational Opportunities Survey data). One of these reports focuses on the student while the other one focuses on the teacher.

The major differences between this report and an earlier report that used this data base (Coleman, et. al., 1966) are:

1. The school is the unit of analysis in this report whereas in the earlier report the unit of analysis was the student. As a consequence of this design, possible within-school and "student

body" influences are not dealt with as they were in the 1966 report. They will, however, be treated in a later report in this series.

2. In this report, analyses were carried out for the entire country and racial-ethnic group membership has been included as a variable. In the earlier study however, racial-ethnic and regional groupings of students were kept separate. A later report in this series deals extensively with separate groupings of students by racial-ethnic group membership, region of the country and rural-urban-suburban background.

3. A number of the variables used in this analysis differed from those used in the earlier analysis. Several of the variables also differed.

4. Results are presented here in terms of commonalities and unique variance explained. In the earlier study they were reported in terms of unique or added variance explained at different points in the analysis.

This report represents the culmination of a team effort in which each of the authors contributed according to his specialized interests and background. Albert E. Beaton designed the systematic approach for data processing and developed the necessary computer programs. He also devised the criterion scaling technique. Frederic D. Weinfeld was instrumental in getting the study started, and worked closely with the senior author in scaling the variables and developing the indices. Carl E. Wisler, with an initial assist from Alexander M. Mood, performed most of the developmental work on the commonality model. He also conducted the quasi-longitudinal aspect of the study and assisted in reviewing the early drafts of this report. Kenneth A. Tabler provided assistance in those phases of data analysis concerned with the development of scaling procedures and indices. As an Office of Education fellow, John M. Proshek performed extensive stratification analyses, only a small fraction of which appear in this report. A monumental share of the data processing and analysis was performed by Wallace M. Cohen and Tetsuo Okada. The senior author is solely responsible for the techniques used, the content of the study and its presentation.

The labors of this team, however, could not have reached fruition without the initial impetus given to the work by Alexander M. Mood, when he was Assistant Commissioner for Educational Statistics, and the later support of the work by Joseph N. Froomkin, when the staff was transferred to his authority as Assistant Commissioner for Program Planning and Evaluation. To them this work is most heavily indebted. David S. Stoller and Harry Piccariello provided valuable guidance and commentaries at various stages of the work. This report has benefited greatly from the thoughtful review and constructive comments of Alexander M. Mood, James S. Coleman and William G. Cochran. The organization and style of this report were improved through the editorial efforts of John M.B. Edwards. Pat Dever helped fulfill many of the administrative requirements associated with an undertaking of this magnitude. Mrs. Shirley Stevens has worked diligently for the past two years in the typing of myriad interim technical reports as well as the basic manuscript for this report, while Mrs. Kathy Crossley prepared the extensive tables of correlations. After the final editing had been performed, Patricia Edwards retyped Chapters 1 through 11, except for the tables. Many of the latter were retyped by Louise Westbrook, Delores Williams, Maryann Nelson, Phyllis Stone, Francis Levine, and Marilyn Miller. The authors are also grateful for the continuing interest shown in their work by their numerous colleagues. Without the efforts of all these people this report would not have been possible.

George W. Mayeske

FOREWORD

I am pleased to be permitted to write the foreword to this monograph because it impresses me as an extremely able and thorough analysis of the Equality of Educational Opportunity Survey data from the point of view of differences in schools. It is gratifying confirmation of the value of these data to those of us who collected them in the belief that they would prove a mine of information about the American system of public education.

Speaking very roughly, when one looks at the variation in achievement scores between pupils, about 65% of it occurs between pupils in the same school and about 35% of it occurs between schools. This monograph is not concerned about variations within schools. It is concerned only with the 35% of the variation that occurs between schools. It endeavors to relate the characteristics of the schools to these variations in achievements between schools. A subsequent monograph will deal with variations within schools.

The analysis follows the same broad design that was used in the Equality of Educational Opportunity report*. But here time allowed it to be done very expertly, whereas originally it had to be done very hastily. The two important characteristics of the design are first, that the large number of independent variables are grouped into a small number of groups, each of which has some intuitive meaning for educators; and second, that the analysis uses proportion of variance explained as the primary means of interpreting the data, instead of the more familiar regression coefficients.

A novel aspect of the analysis is the use of criterion scaling. Criterion scaling is a device which transforms an independent variable so that its relation to the dependent variable will be exactly linear. It is a transformation that uses up a certain number of degrees of freedom, and in so doing it puts all the explanatory power of that independent variable into linear regression. Perhaps it will assist our intuitive grasp of the idea to suppose that the dependent variable depends on a third-degree polynomial, to all intents and purposes, in the independent variable. If we calculated an ordinary regression equation of the dependent variable against a third-order polynomial in the independent variable, we would have to evaluate four coefficients in the polynomial and would therefore use up four degrees of freedom. This regression would remove all of the variations in the dependent variable that the independent variable is capable of removing. We may think of criterion scaling as essentially transforming the independent variable by the same third-order polynomial. After that transformation, the dependent variable is related to the transformed independent variable by a simple linear relation that removes all of the variations in the dependent variable removed by the third order of polynomial. This device is particularly useful for the kind of analysis we are interested in doing with these educational data. We are little interested in regression coefficients or whether the regression is linear, quadratic, cubic, or whatever shape. We are interested in the total amount of variation in the dependent variable that can be associated with the independent variable. The rationale for this viewpoint will be discussed below.

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* J.S. Coleman et al., Equality of Educational Opportunity, National Center for Educational Statistics, U.S. Government Printing Office, Washington, D.C., 1966, Catalogue No. FS 5-38001.

The next step in the analysis was to group the large number of independent variables into a few groups. This is not a straightforward objective process but a combination of analytical methods and judgment. As it was done in this monograph, it makes for a beautiful piece of data analysis. The necessity for it lies in the fact that it is impossible to get an intuitive grasp of the importance of a single independent variable among several hundred others when it is correlated with a great many of these others. The traditional technique for handling this situation is factor analysis. When one tries to do factor analysis with educational data, he often finds that the resulting groupings do not make a great deal of sense from the practical point of view. That is, one factor may contain variables that pertain to teachers, other variables that pertain to pupils, and still others that pertain to the school facilities. That kind of factor is not very useful for understanding the educational process or trying to improve it. Nor are such factors very handy for designing experiments to explore the nature of the educational process. The grouping developed by this study used factor analysis, but not to the point of forming groups of variables that cut across the basic concepts educators find useful in describing and understanding the educational process.

Now let us turn to the nature of quantification in such a complex field as education. The numbers dealt with in these analyses are, of course, nothing like the measures that physical scientists or engineers have. Their numbers measure properties of very definite objects and often readily visible objects which have undeniable dimensions, density, temperature, and so on. Education measures are not even comparable to the measures that economists use. There is great specificity to the dollars per hour that a laborer earns, or to the number of automobiles turned out in one year by a manufacturing plant, or the number of ounces of gold removed from Fort Knox last year. The numbers of economics are definite measures of definite variables and, while a few of them are arbitrary indexes, their specifications are agreed upon by economists and educated laymen.

The numbers that we are dealing with in these educational studies are not direct measures, they are simply indicators. When a child takes an achievement test in arithmetic, the resulting score is only an index of what he knows about arithmetic. There is often a great deal of argument about the meaning of that index. In fact, one can find on the market a variety of tests representing different views of what should be emphasized in assessing a student's knowledge of arithmetic. Similarly the independent variables relevant to education are, by and large, simply indicators. For example, an index of the socio-economic status of a child's family may be made up of estimated family income, years of education of the parents, number of books and magazines in the home, and whether or not there are certain objects in the home (television sets, a telephone, household appliances, etc.). Such an index does not measure anything remotely tangible about status. Certainly the number of years of education of a parent says very little about how educated he is. Nor does the presence or absence of various gadgets really measure economic status. The fact that we must deal with these indicators, these hazy numbers that do not directly measure what we have in mind, should warn us against attaching much importance to regression coefficients. For example, one of the items of information in the Equality of Educational Opportunity Survey had to do with whether or not there was a dictionary in the home. That item enters with non-trivial weight into the index of socio-economic status. Obviously the regression coefficients relating educational achievement to socio-economic status do not imply that one can carry out a tremendous educational accomplishment at a very low price simply by placing a dictionary in every home. This is why we could not grant much significance to regression coefficients in the original analysis of the Equality of Educational Opportunity data, and also why the authors of this volume have not dealt with the regression coefficients. Instead, they have associated variations in achievement with variations in these indicators.

The fact that the analysis must deal with indicators instead of more direct measures also justifies the use of criterion scaling. The square of an indicator or the logarithm of an indicator is simply another indicator. There is little point in exploring whether educational achievement is related linearly or not to an ad hoc indicator. The interesting question is whether or not any part of the variation in educational achievement can be associated with a given indicator and, if so, how much? When this report examines how much, it may find more than the original analysis found in otherwise comparable situations because achievement will have higher correlation with a criterion-scaled indicator than with the linear component of the indicator. But perhaps it is misleading to compare these two analyses at all. This one, unlike the first, deals only with school-to-school differences, and handles ethnic groups quite differently.

It is important to examine another aspect of criterion scaling. But first we need to consider briefly the problem caused by correlations between independent variables. It is a problem that complicates data analysis in any field of social science and is especially troublesome in education. As an example let us suppose we are examining the relation of student test scores (T) to two indicators: teacher quality (Q), and socio-economic status (S) of the community in which the school is located. Purely for illustrative purposes, let us assume that a regression of T on Q alone removes 25% of the variance of T, that a regression on S alone removes 20%, and that the regression of T on Q and S jointly removes 30%. There is a high correlation between Q and S so that, while S alone removes 20%, when S is added to the regression on Q it merely raises the reduction in variance from 25% to 30%. The "unique" part of the variance removed by S is thus said to be 5%. What this means is that the part of the 30% that Q does not remove is considered to be uniquely associated with S. Similarly when Q is added to the regression of T on S, it raises the variance removed from 20% to 30%. Hence the unique part of the variance of T removed by Q is 10%. Finally, then, the 30% of variation in T removed by the joint regression on Q and S may be broken down into three parts as follows:

5% that is uniquely associated with S
10% that is uniquely associated with Q
15% that may be associated with either S or Q

The third figure (sometimes called the common part, or "commonality," in the report) is obtained by subtracting the first two from 30%. The first and third added together then give the proportion of variance associated with S, while the second and third give the proportion associated with Q.

The correlation between Q and S thus leads to a certain frustration in trying to analyze and understand the data. From the point of view of attempting to control or improve the educational process, it would be helpful to be able to say something more definite about that 15% than that it may be associated with either S or Q. Unfortunately there is no possibility of breaking the 15% down into parts that can be attributed to one or the other of S or Q.

The analysis carried out in the first Equality of Educational Opportunity report used the technique of partitioning variance into unique and common parts. At the time we were doing them we thought these calculations were a novel contribution to data analysis. Later, we found that others had been doing the same thing at about the same time. Excellent discussions of the technique, together with significance tests and illuminating examples, have now been published by Newton and Spurrell.*

The original analysis, however, concentrated on determining the relative importance of various factors. To assist educators to make judgments of relative importance, considerable effort went into computing the unique parts of variation associated with given factors. These unique parts provided them with evidence in addition to the usual evidence provided by correlations. The present report goes much further than that. It presents not only the unique parts but all combinations of common parts. Thus one can tell at a glance the extent to which a factor overlaps another factor, and how those overlaps change when a factor is added to or deleted from a set of factors.

What is the effect of criterion scaling on calculations of unique and common parts of variation associated with two independent variables? There is no simple answer because the effect depends on the nature of the correlation between the two. The criterion scaling will certainly increase the amount of variation associated with each independent variable separately. It will also increase the amount associated with the joint regression. The effect on the two unique parts and on the common part may generally be that all three will be increased inasmuch as their sum will certainly be increased. However it is a reasonable speculation that the unique parts may be increased rather little by the criterion scaling, and that most of the total increase may fall in the common part. There are two reasons for this. First, we may expect that there will be a correlation between the non-linear parts of the independent variables. Second, it is just as reasonable to expect that there will be a correlation between the linear component of one and the non-linear component of the other. If this is correct, then some fraction of what was in the unique part on the linear analysis would be transferred to the common part on the criterion scaling analysis. Hopefully these speculations may receive a little attention from theoretical statisticians in the near future.

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* R.G. Newton and D.J. Spurrell, "A Development of Multiple Regression for the Analysis of Routine Data," Applied Statistics, Vol. 16, pp. 51-64 (1967);

R.G. Newton and D.J. Spurrell, "Examples of the Use of Elements for Clarifying Regression Analysis," Applied Statistics, Vol. 17, pp. 165-172, (1968).

I cannot conclude this foreword without paying tribute to former Commissioner of Education Francis Keppel, without whose efforts we would not have the Equality of Educational Opportunity data at all. Soon after he assigned to me the task of carrying out a survey of the equality of educational opportunity in the public schools, it occurred to me that it would be worthwhile not only to document the inequalities, but to try to determine which of them were more important and which less important for the student's learning. I realized of course that for such an investigation it would be necessary to give achievement tests to a sample of students. Mr. Keppel agreed that achievement testing would add a valuable dimension to the survey, but he foresaw that this addition would not be wholeheartedly supported by the educational establishment. Many educators cling closely to the idea of local control of education. Mr. Keppel correctly predicted they would be very dubious of any effort on the part of the Federal government to test individual students.

Before coming to a final decision about the matter Mr. Keppel discussed it with several prominent members of the world of education. He found their reactions to be somewhat more negative than positive. But he decided that the chances were not hopeless, and that even partial success would be of such value that we should go ahead with the project. Then he personally, or his deputy, Henry Loomis, took it upon themselves to discuss the achievement testing aspects of the survey with every Chief State School Officer in the nation. They explained carefully what we had in mind, which was not to evaluate schools, or teachers, or State educational systems, but simply to get some data on the basis of which one could determine which deficiencies of the educational system seemed to be particularly important to learning. The survey occurred at a time when the Federal government was beginning to allocate a great deal of money to low-income school districts under Title I of the Elementary and Secondary Education Act of 1965. It seemed worthwhile to us to let the survey serve the secondary purpose of developing information by means of which these districts might be given some clues as to how the money might best be spent. In any case, the efforts of Mr. Keppel and Mr. Loomis were quite successful, and most Chief State School Officers gave good support to the survey. The few that did not support it did not actually oppose it; they simply stood aside and left it up to the localities as to whether they would participate in the survey or not. The actual participation rate was about two-thirds. Without Mr. Keppel's heroic efforts it would have been very much lower than that, and probably could not have been carried out at all.

Once Mr. Keppel committed himself to making the survey a fundamental exploration of the nature of educational opportunity, all manner of happy events ensued. Most importantly, it became an easy matter to persuade the distinguished sociologist, James S. Coleman, to join the enterprise as director. Soon thereafter another distinguished sociologist, Ernest Q. Campbell was persuaded to join him as co-director. A number of America's most eminent educators joined in as advisors. Educators all over the land cooperated to make the survey a success. I cannot recount here the whole sequence of events, but certainly this volume is the latest outstanding element of the sequence. All persons concerned with the quality of education will be in debt to Dr. George Mayeske and his colleagues for their thorough analysis of the school aspects of the survey information.

Alexander M. Mood

University of California at Irvine

ABSTRACT

The purpose of this study was to discover what characteristics of the nation's schools are most closely related to school outcomes. This involved devising methods by which school influence could be distinguished from social background influence. The study was conducted by the Office of Program Planning and Evaluation of the U.S. Office of Education, Department of Health, Education and Welfare. Data came from a survey commissioned by Congress in the Civil Rights Act of 1964 and carried out the following year. The population sampled consisted of the students, teachers, principals and superintendents of the nation's public elementary and secondary schools. A five percent stratified cluster sample was used. About 650,000 students from about 4,000 schools, with their teachers, principals and superintendents, were included in the study. Since the purposes of the survey were to determine the educational opportunities of minority groups, strata with higher percentages of non-whites and other minority group members were sampled more heavily. As a result, over forty percent of the 650,000 students were from minority groups. For reasons of time and economy, and because little essential information would have been added anyway, only students in grades 1, 3, 6, 9, and 12 were considered. Separate tests and questionnaires were administered to each of these grades, as well as to the teachers, principals, and superintendents. A preliminary analysis of these data has already been published in the report "Equality of Educational Opportunity", to which the present report is intended as a sequel. In the present study, which is the first of a series, the unit of analysis was the school. The process of data analysis began with the reduction of the approximately 400 questionnaire items to between 60 and 70 items. This was done by grouping related items according to their meaningfulness into indices. The indices so produced were in turn divided into three groups: student's social background, school's characteristics, and school outcomes. No subsets of students within a school were distinguished because the main interest in the present study was in the school's effect on all its students. The thirty-one indices making up the second group were subdivided into three additional groups: facilities, pupil programs and policies, and school personnel and personnel expenditures. Finally, two main kinds of school outcomes were distinguished: student's attitudes and motivations, and student's achievement. The statistical techniques employed in pursuing the main questions were regression analysis and partition of multiple correlation. In this way it was possible to determine the percent of school outcomes associated with the distinguishable influence of school's characteristics, the percent associated with the distinguishable influence of student's social background, and the percent that was common to these

two groups. The principal findings were as follows. On the whole, the influence of the school cannot be separated from that of the student's social background -- and vice versa. Moreover, the common influence of the school and the student's social background exceeds either of their distinguishable influences. Schools exert a greater influence, in terms of both attitude and achievement, on students who have relatively **high** socio-economic status, are either white or Oriental-American, and come from homes where both parents are still living together. In this process, a school's physical facilities seem unimportant compared with its personnel. Of its personnel's characteristics the most important seems to be experience of racially imbalanced educational settings -- e.g. being educated and teaching in virtually all-white or all non-white institutions. Schools that score high on one outcome, such as achievement or the desire to stay in school, tend to score high on the others. Most of these outcomes become increasingly related to the thirty-one school indices the longer the student stays in school. Even though students may start at the same level of achievement, the longer they stay in school the more easily their achievement gains can be predicted from the common influence of their school with their social background. In fact, it appears that the influence of the schools is bound up with the student's prior experiences. Up to the twelfth grade, the distinguishable influence of social background is greater than that of the school. At the twelfth grade, however, social background influence is less than school influence for motivational and attitudinal outcomes. But it remains greater for outcomes pertaining to achievement. In conclusion, it may be stated that the overwhelming impression received from these data is that schools are indeed important. It is equally clear, however, that their influence is bound up with that of the student's social background. In such a situation, survey research is of only limited use. More experimental studies are needed, expecially of educational innovations. Among such innovations should be included the periodic monitoring of school systems, the establishment of explicit performance criteria by which to monitor them, and the attainment of educational institutions that are more balanced in the socio-economic and racial-ethnic composition of their students.

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1. WHAT THE REPORT IS ABOUT

This chapter presents a brief non-technical summary of the report. A series of questions and answers is used to bring out the main points.

1.1. What question did this study seek to answer?

This study attempted to find out what it was about our nation's public schools that makes some better than others.

In order to find out what makes for a good school we had to be a little more specific about what we meant by "good" in such a context. A school in our society is expected to provide its students with information and skills -- knowledge of American history, for example, or facility in performing certain arithmetical operations. It is also expected to teach a student to get along with other children who are different from himself, to help him discover the nature of his own abilities, and in general to prepare him for adulthood and the duties of a citizen. All of these different things a school is expected to accomplish we can call outcomes of the school, and we can judge a school good or bad in terms of its outcomes.

Schools may also differ in their resources, i.e. the staff and facilities they can bring to bear in influencing their outcomes. For example, some schools can give more attention to their students' learning needs because they have more teachers and teacher aides per student. Schools differ, too, in the kinds of students that they get. Some schools have a large number of students who, upon entering school, already possess knowledge, skills and motivation that a large number of students entering other schools do not possess. Many of these differences are attributable to family influences. Some families have more resources than others and spend more time in different activities with their children. Their children accordingly develop various skills and a readiness to learn. Such family practices vary with the socio-economic background of the student as well as with his racial and ethnic background. We therefore refer to differences from this source as differences in the student's social background.

We can now reformulate our original question. Instead of "What makes for a good school?" we propose to ask: "After taking into account the social background of a school's students, what characteristics of the schools are most effective in influencing school outcomes?"

1.2. What source of information was used?

Our source was a survey of the nation's public elementary and secondary schools conducted in the fall of 1965 by the U.S. Office of Education at the direction of Congress. The survey entailed the testing and surveying of about 650,000 students*, together with their teachers, principals and superintendents, in some 4,000 public schools throughout the country. The survey sample consisted of a 5 percent sample of schools. Detailed information, both objective and attitudinal, was collected on the student's home background and his attitudes towards school, race relations, and life in general. A battery of ability and achievement tests was administered at each of the five grade levels. Information was collected from the teachers and principals concerning their training and experience, their view of the school, and many other topics. The final part of the teacher questionnaire consisted of a short vocabulary test which was intended to be a measure of the teacher's verbal skills. In addition, the principal provided data on the school's facilities, staff programs, curricula, etc. This study utilized the information from this survey (called the Educational Opportunities Survey) to explore school influences.

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* Only students in grades 1,3,6,9, and 12 were included in the survey.

1.3. How were the data analyzed?

There were approximately 400 items of information available on the students, teachers, principals and schools. This was obviously too much information to analyze or even to comprehend in its raw state. Consequently, a program of analysis was undertaken to reduce these 400 items into a more manageable number by grouping items related to one another. For example, we developed an index of the special staff and services a school offered by grouping the number of art, music, speech and remedial reading teachers it had together with the number of guidance counselors, librarians, and nurses and a measure of its provisions for handling mental health problems. This program of analysis reduced the number of items from 400 to a more manageable number between 60 and 70. The reduced items were then used in later analyses.

Three main divisions of the reduced items were used in the main body of the analysis. The first division contained items that pertained to student's social background. These included parents' educational level, father's occupation, number of parents in the home, and whether they were predominantly white, Puerto-Rican, Mexican-American, Indian-American, Oriental-American or Negro. The second division contained items that pertained to school's characteristics. These included school's facilities and school personnel's training, experience, kind of college attended, racial and ethnic composition, average verbal skills, and average salary. The third division contained items that pertained to school outcomes. The items here could be classified into two main types. There were those that referred to students' attitudes and motivations. These included the proportion of students who planned to stay in school or pursue more education after they had graduated, the expectations they felt their parents and teachers held for their academic performance, what they believed an education would help them attain, and several related measures. There were also those that referred to student's achievement. These included both skills he had acquired and things he had learned in traditional academic areas.

A large number of statistical analyses were performed inter-relating items from these three main divisions. The primary statistical tools used were regression analysis and partition of multiple correlation. As a result, we were able to distinguish between:
(i) percent of school outcome associated with the distinguishable influence of the school's characteristics;
(ii) percent of school outcome associated with the distinguishable influence of the student's social background;
(iii) percent of school outcome that could just as well be associated with either one.

1.4. What kinds of answers were obtained?

The results of our analyses can be grouped into three main bodies of findings:

(1) Very little influence of the schools can be separated from the influence of their students' social backgrounds. Conversely, very little of the influence of the students' social background can be separated from the influence of the schools. The schools, as they are currently constituted, produce more learning and foster greater motivation in students who:
(i) come from the higher socio-economic strata rather than from the lower socio-economic strata;
(ii) have both parents in the home rather than only one or neither parent in the home;
(iii) are white or Oriental-American rather than Mexican-American, Indian-American, Puerto-Rican or Negro.

(2) Until the twelfth grade, the part of the influence of the student's social background that can be separated out is usually larger than the part of the school's influence that can be separated out. At the twelfth grade, however, the distinguishable influence of the school is greater than the distinguishable influence of the student's social background for most of the motivational and attitudinal outcomes. The opposite is true for achievement at the twelfth grade.

(3) For the attitudinal and motivational outcomes the common influence of the school's characteristics and the student's social background differ for the different grade levels. But for achievement the school's characteristics and the student's social background have a common influence that is much larger than their distinguishable influences, and that increases the longer the students stay in school.

Figure 1.1 illustrates the meaning of some of these conclusions in diagrammatic form.* The figure refers to influences on study habits at the ninth grade. The different segments of the circles represent the proportion of study habits and achievement that can be associated with the influences, both distinguishable and common, that we have been discussing. The variable we have called Study Habits refers to how many hours a day the student studies, how often he talks with his parents about his school work, and related measures. It will be seen that the distinguishable influence of the student's social background, U(B), is by far the greatest influence on study habits. For Achievement, which refers to the student's reading and mathematics skills as well as his general knowledge, U(B) is still greater than the distinguishable influence of the school characteristics, U(S), but the common influence of these two sets of variables, C(BS), is dramatically greater than their distinguishable influences.

(4) Schools that perform well on one outcome tend also to perform well on other outcomes. These performances tend to facilitate and reinforce one another. For the attitudinal and motivational outcomes a school's generalized favorable performance has a large distinguishable influence. It also has a common influence with the student's social background. For the achievement variable the influence of a generalized favorable performance is manifested in common with the school's characteristics and the student's social background.

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* The pie charts are obtained by dividing the commonality coefficients from Table 5.3.2.1 by the squared multiple correlations for both sets of variables and drawing these numbers as relative proportions of a circle.

Figure 1.1. Diagrammatic Representation of the Distinguishable and Common or Indistinguishable Influences of the School's Characteristics and the Student's Social Background on Study Habits and Achievement at the Ninth Grade

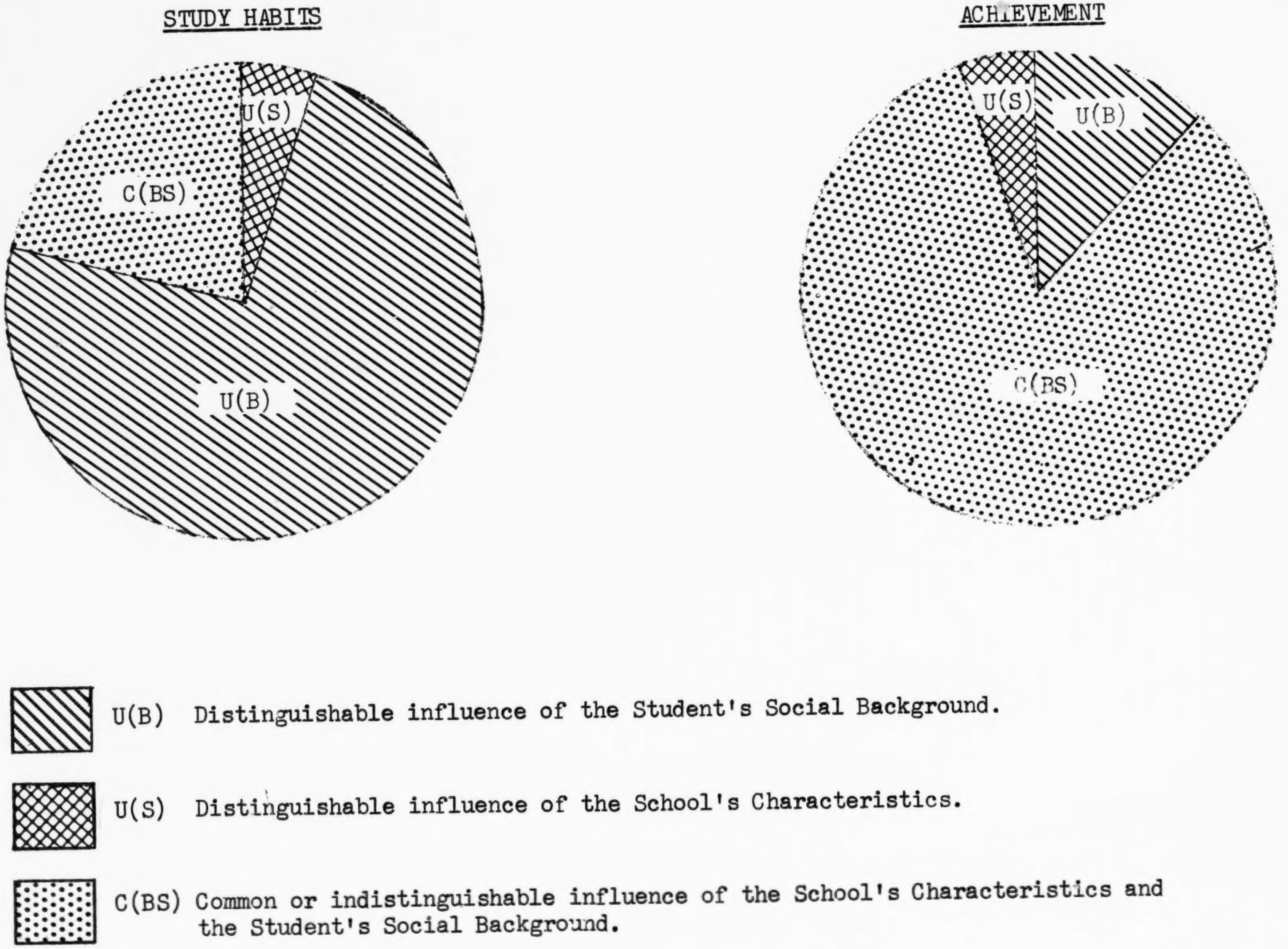

Figure 1.2 gives a diagrammatic illustration of these results for Study Habits and Achievement at the ninth grade.* The figure shows that the other school outcomes have the largest distinguishable influence on study habits, but that the largest influences of all are due to the common roles of the student's social background with the other school outcomes and the school characteristics, C(BSO). The same is true of Achievement.

(5) The school variables that are most heavily involved in school outcomes are those concerned with actual characteristics of the school's personnel, as distinguished from the school's physical facilities and pupil programs and policies, or even from school personnel expenditures such as teaching salaries.

(6) Chief among teacher's characteristics related to school outcomes were those reflecting experience in racially imbalanced educational settings. Most non-white teachers had attended predominantly non-white educational institutions and were teaching predominantly non-white students. Non-white educational settings, it was suggested, tend to have associated with them lower levels of achievement and motivation, as well as less favorable socio-economic and family conditions. The result is less adequate preparation than that received in predominantly white institutions.

1.5. To what extent do we already know these things?

Many of these results coincide with everyday experience. They also coincide with results obtained by other investigators working with more limited samples of students and schools. The unique feature of this study is that it documents the extent and magnitude of these relationships with a national sample for the first time. It is therefore the first survey that enables one to gauge the full scope of the problems confronting the American educational system.

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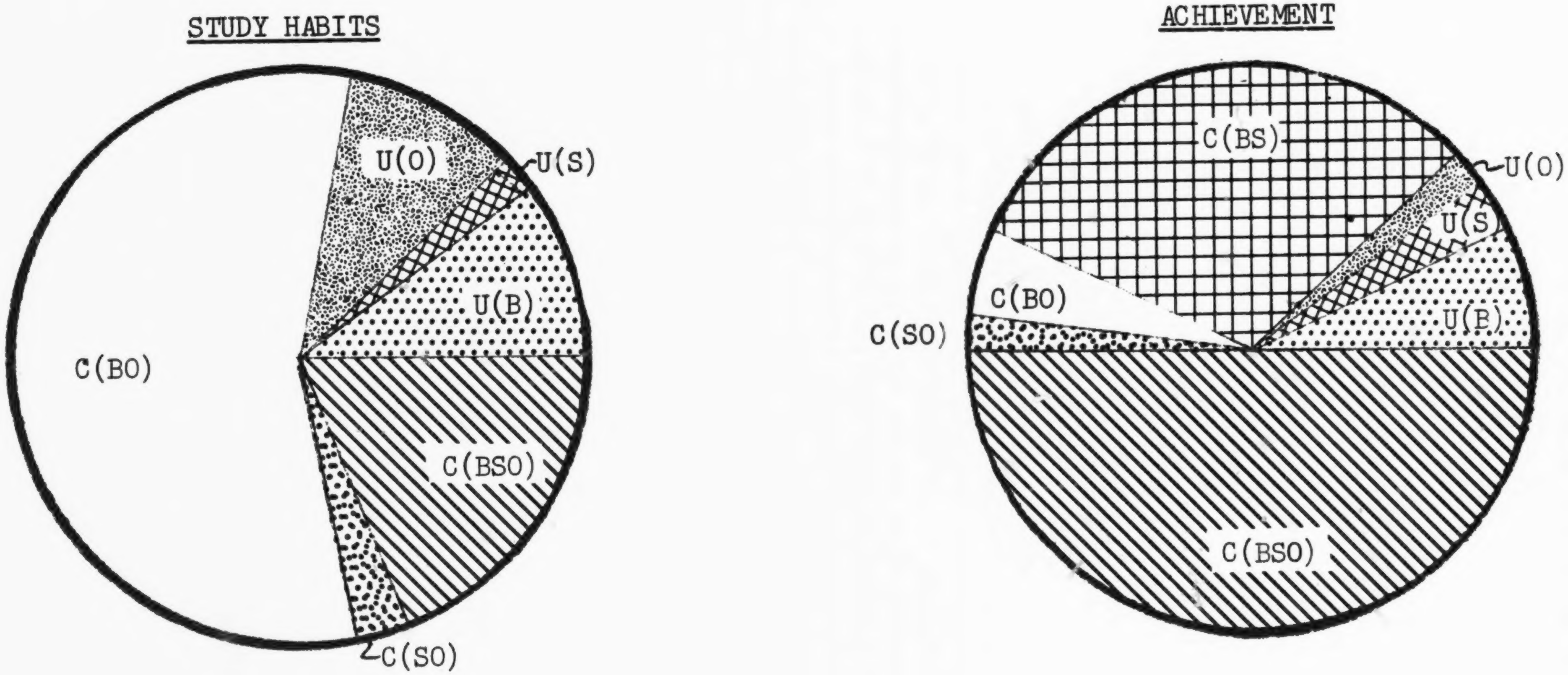
* The pie charts are obtained by dividing the commonality coefficients from Tables 9.3.6 and 9.3.7 by the squared multiple correlations for all three sets of variables and drawing these numbers as relative proportions of a circle.

Figure 1.2. Diagrammatic Representation of the Distinguishable and Common Influences of the School's Characteristics, Student Social Background and Other School Outcomes



U(B)	Distinguishable influence of Student Social Background.
U(S)	Distinguishable influence of School Characteristics.
U(O)	Distinguishable influence of Other School Outcomes.
C(BS)	Common influences of the Student Social Background and School Characteristics.
C(BO)	Common influence of the Student Social Background and Other School Outcomes.
C(SO)	Common influence of the School Characteristics and Other School Outcomes.
C(BSO)	Common influence of the Student Social Background, School Characteristics and Other School Outcomes.

1.6. What needs to be done?

Our analyses have shown that it is very difficult to distinguish between the influence of the student's social background and the influence of school. This makes it difficult if not impossible to tell in any specific way how much of a change can be produced in certain school outcomes by systematically altering school characteristics such as the amount and kind of training received by teachers. In our opinion, specific answers to questions concerned with the improvement of school outcomes can be obtained only from situations governed by an appropriate degree of experimental control. To find out what will improve the schools we need to try a variety of very different kinds of innovations. Some of them might include providing parents with a choice of school systems that their children can attend. Others might involve greater parental control over the educational process or more individualized programs of instruction. All will have to be systematically evaluated and compared.

Even if an innovation has proved its worth, simply installing it, we believe, is not enough. A school's performance, like that of any complex organization, can fluctuate over time. It therefore requires periodic monitoring in the light of its objectives. But what are those objectives? If a school is not managed in terms of explicit performance criteria, then it will be impossible for its clientele -- school board members, parents, all those who act in behalf of our society's children and adolescents -- to tell with certainty whether it is performing well or badly. Accordingly we feel that such criteria and such monitoring should be instituted.

In conclusion, let us quote from the last chapter of this report:

> How can a society that is committed to equality for all, in all aspects of its life, expect to achieve that equality when its educational enterprise not only reflects but perpetuates an inequitable social structure? Our analyses have suggested that the extraordinary aggregation of students into schools on the basis of their

race, ethnicity and socio-economic background precludes the attainment of an open society. Indeed, if the dependence of the schools on the social background of their students could be lessened (viz. if student bodies were more balanced or better mixed in terms of their social backgrounds) then, in the language of our analysis, educational kinds of variables might make a greater relative contribution to students' achievement levels and motivation.*

SUMMARY

There are three major areas that the writers believe hold promise for improving the American public schools. These are: (1) the trial of new programs and approaches in situations so structured that the results of the innovation can be clearly ascertained; (2) the incorporation of successful innovations as operational programs in a school management system that periodically monitors all ongoing programs against specified objectives; (3) the promotion of greater socio-economic and racial balance in the schools (as well as in housing and employment), so that the opportunity structure of American society can be more accessible to all its members.

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* See Chapter 11, page 329.

2. OBJECTIVES AND STUDY DESIGN

2.1. The Equality of Educational Opportunity Survey

The Civil Rights Act of 1964 requested the Commissioner of Education to "conduct a survey and make a report to the President and the Congress, within two years of the enactment of this title concerning the lack of availability of equal educational opportunities for individuals by reason of race, color, religion or national origin in public educational institutions at all levels in the Unites States, its territories and possessions, and the District of Columbia".

In response to this request the Educational Opportunities Survey was carried out by the National Center for Educational Statistics of the U.S. Office of Education, directed by Alexander M. Mood.* In addition to its own staff, the Center used the services of outside consultants and contractors. James S. Coleman of Johns Hopkins University had major responsibility for the design, administration and analysis of the Survey. Ernest Q. Campbell of Vanderbilt University shared this responsibility and, in the case of the college surveys, assumed the greater share of it. Frederic D. Weinfeld served as Project Officer for the Survey.

The Survey addressed itself to four major questions:

(1) To what extent are the racial and ethnic groups segregated from one another in the public schools?

(2) Do the schools offer equal educational opportunities in other respects?

(3) How much can students be said to learn, judged by their performance on standardized achievement tests?

(4) What kinds of relationships may be supposed to exist between a student's achievement and the kind of school he attends?

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* Author of the foreword to this report.

Work was started on the survey in the spring of 1965 with a view to administering the questionnaire and tests that fall. Approximately 70 percent of the schools that were requested to participate in the study actually did so. This entailed testing and surveying some 650,000 students in approximately 4,000 schools throughout the country in grades 1,3,6,9 and 12, together with their teachers, principals and superintendents.

On the basis of competitive bids, the Educational Testing Service of Princeton, New Jersey, was awarded the contract for conducting the Educational Opportunity Survey, including test administration, test scoring, data processing and data analysis. They also consulted on various aspects of the Survey and convened an Advisory Panel to aid in its design and analysis.

The Survey used a 5% sample of schools. This was a two-stage, self-weighting, stratified cluster sample. The Primary Sampling Units (PSU's) in the first stage were counties and Standard Metropolitan Statistical Areas (SMSA's). The PSU's in the second stage were high schools. When one was drawn in the sample the elementary schools feeding into that school were automatically included in the sample as well. Since the Educational Opportunities Survey was primarily concerned with the children of minority groups, and since these groups constituted only about 10% of the total school population, the schools were stratified according to their percentage of non-white students. Strata with higher percentages of these students were given larger sampling ratios and thus were sampled more heavily. The final result was that over 40% of the students in the Survey were from minority groups.

Separate questionnaires were administered to teachers, principals, superintendents, and students at each of the grade levels studied. The Teacher Questionnaire contained some 72 questions including:

> personal data, professional training, type of college attended, teaching experience, type of school and student preferred, job satisfaction, opinions on issues and problems of integration (busing, compensatory education, etc.), and problems existing in their school.

The final part of the Teacher Questionnaire consisted of a voluntary test of 30 contextual vocabulary items. The purpose of this test was to get a measure of the teachers' verbal facility.

The 100-man Principal Questionnaire was the main source of information about the school. The questions covered school facilities, staff, programs, racial composition, problems, curricula, extra-curricular activities, and many other school characteristics. There were also questions on the personal background and training of the principal and his opinions on the problems of integration.

The Superintendent Questionnaire consisted of 41 questions. In addition to miscellaneous administrative information about the school system, including its expenditures, the questions dealt with the Superintendent himself and his attitudes toward current educational issues.

Detailed factual and attitudinal data about the students were also obtained by questionnaire. Included were items of home background information so that these data could later be equated for such items as socio-economic status, family background, family interest in education, etc.

Different questionnaires were used for each of the grade levels. The Twelfth-Grade Student Questionnaire for example, was comprised of some 116 items. In addition to the questions on home background and the usual personal and school data there were questions on the students' attitude towards school, race relations, and life in general. Representative examples of each category are: "How good a student do you want to be in school?" "If you could be in the school you wanted, how many of the students would you want to be white?" "Good luck is more important than hard work for success. (Agree or Disagree)."

Tests of the various school skills were to be the yardsticks for measuring the detrimental effects of poor school facilities and characteristics upon student learning. The Test Battery was designed as an integral part of the entire research design. The object was to obtain as much data as possible within the limitations of time and available resources. Two of the basic skills chosen were reading comprehension and mathematics ability. These two areas are common to all school curricula and all grade levels. Another area deemed important was that of the general level of knowledge gained by the students, either from their school courses or from experiences in the outside world. A test of general information was therefore included in the Test Battery. Two other ability tests were used to measure the students' verbal and ratiocinative skills

One major limitation on the design of the test battery was the time required for test administration. It was considered both desirable and administratively feasible to have the test battery and the questionnaires completed in no more than one school day. The lower grades had to have a shorter battery because of the limited attention span of the younger children. Therefore the testing time increased in the various test batteries until it reached its maximum length in the 12th grade.

The lead time before the administration of the Survey in September 1965 was too short to develop specific tests in the above areas. For this reason, existing standardized tests were used. However because full-length standardized tests usually require more time than would have been available, it was decided to use shortened, or half-length, forms of these tests rather than to omit tests in any area. Another administrative requirement was that the various tests be interlocked through as many grades as possible so that scores on the same type of tests given at different grade levels could be compared. The scaling allowed us to have a comparable measure of growth between the different grades.

The Act required that the Survey be made at "all levels." It was therefore decided to administer the tests to selected grades at spaced intervals. The expectation was that this would give a good picture of what was going on in the schools while avoiding the need to test at every grade level. The grades chosen were 1, 3, 6, 9 and 12.

Following this survey a report entitled the Equality of Educational Opportunity was submitted to the President and the Congress on July 2, 1966, under the principal authorship of James S. Coleman. This report has become known as "The Coleman Report"; the reader is referred to it for further details of the study (Coleman et al., 1966).

2.2. Analyzing Differences Among Schools

The present study is based upon the assumption that at least some of the differences that exist between public schools in the United States are related in a causal manner to the attitudes and achievement levels of their students. The objectives of the study, then, are twofold: to find characteristics of the schools that seem to be related to school outcomes, and to suggest what aspects of the schools might be most important in producing these outcomes.

The number of responsibilities that schools are expected to fulfill for their students is on the increase. Reading skills, manipulation of mathematical symbols, knowledge in areas as diverse as history and hygiene -- all these fall within the province of the schools. They also have a part to play in developing their students' desire for learning, ability to get along with others, ambition to succeed, and even general philosophy of life. All of these outcomes the schools influence to a degree that varies according to the kinds of students they receive and the staff and facilities at their command.

Students with different family backgrounds enter school and progress through it with different conceptions of how education will satisfy their present and future needs. Why do some schools influence these conceptions more than others? Is it the teacher's training and experience, the number of pupils per teacher, or something about the instructional facilities? How much of a role does each of these play?

Many of the differences that exist between schools exist also within a single school. This study, however, will delve only into those differences that exist between schools. A later study in this same series will explore differences within schools.

In analyzing school characteristics that are related to school outcomes one has to take into account the characteristics of entering students, since these may also be related to school outcomes. The difficulty with this approach is that both the characteristics of the schools and their influence on the students may be so highly related to the characteristics of the entering students that after these are taken into account there may be very little that can be attributed to the independent influence of the school. We shall see later that this problem does arise and that techniques were developed for coping with it -- though not, unfortunately, for overcoming it, at least with the kind of information used here.

School outcomes can be studied with the help of several different kinds of information or data. Each kind can be thought of being located somewhere on one of the following two continua:

(1) Cross-sectional versus longitudinal data. Cross-sectional data are collected at one point in time. For example, achievement tests and family background questionnaires can be administered to students on the same day, and then the achievement test results can be related to the questionnaire results. Longitudinal data are collected at two or more different points in time, but from the same individuals. Thus, achievement test data can be collected from students immediately before and after their participation in a course of study, and then compared.

(2) Experimental versus associational data. An experimental situation is one that is so controlled or structured as to yield answers to a particular set of questions. A simple example of data obtained from an experimental situation would be the scores on a reading comprehension

test obtained from students randomly assigned to one of a number of classes where different techniques of teaching reading were being tried out. Associational data are statistically manipulated to equate for conditions not amenable to experimental control. Thus if the students in the above example could not be assigned randomly to the different classes, but if a measure were available of their ability before they entered the course, their post-course reading scores might be adjusted to offset individual differences. In this way it might be possible to obtain a reliable estimate of the course's effectiveness. If, however, the kind of reading class they enroll in is very highly related to their initial ability, then there may be very little improvement in reading comprehension that could be attributed to the different techniques of teaching reading. Accordingly, knowledge of individual differences would not help very much.

All these different kinds of data have their advantages and disadvantages. Choice of one kind over another must depend on the research situation. Thus, associational data are often easier and cheaper to obtain than experimental data. But if the control or equating variables are highly correlated, then associational data may not yield any definitive answers. On the other hand experimental conditions are often difficult to maintain, especially in large-scale studies, because of the large number of uncontrolled variables. Similarly, longitudinal data are usually both more difficult to obtain, because of the attrition of subjects during the course of the study, and more expensive because of the repeated testing that is required. Cross-sectional data are usually easier and cheaper to obtain than longitudinal data, but may not readily support inferences concerning the nature of changes over time. In short, for any given study an investigator must often compromise between what is desirable and what is achievable.

For the study of school influences on student achievement it would be highly desirable to obtain longitudinal data on many schools and their students, and to have some of the schools participate in experimental situations while others operate more routinely.

Such data would be costly and difficult to obtain. They would be worth obtaining, however, because nothing of the kind is currently available on a national scale. The fact that many states are currently developing such data points to their usefulness.

The analyses presented in this report are based upon cross sectional-associational data. That is to say, schools were sampled at one point in time, while information on family background, together with achievement test data, were collected from different students at different grade levels. We then attempted to determine what were the influences associated with the students' attitudes and achievement levels. A brief description of the study design, manner of sampling and instruments used is given in the following section.

2.3. Design and Analysis

The main objective of this study was to analyze the data obtained from the Equal Educational Opportunity Survey (EOS) using the school as the unit of analysis. In this way we hoped to learn what differences among schools are related to school outcomes, and how both are related to the socio-economic background and racial-ethnic group membership of the students. Within this context, two major questions offered themselves for solution:

(1) How do the schools' characteristics influence such things as the achievement level of all the students in school?
(2) How do the schools' characteristics relate to the various achievement levels of the different kinds of students they get?

This study focuses primarily on the influence of the schools on all of the students in the school.*

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* A later study in this series will focus on the influence of the schools on different subsets of students within the school.

In order to do so, it had first to deal with the following technical problems:

(i) How could discrete categorical variables such as Father's Occupation best be scaled so that they could be meaningfully interpreted and related to other variables of interest?

(ii) How could provision be made for nonlinear or curvilinear relationships that might otherwise be obscured in the data?

(iii) How could estimates be made of missing data, particularly when those students who failed to provide an answer to a question were of great interest to the analysis?

(iv) How could the more than 400 variables be reduced so that the task of data processing and analysis could be made less complex?

To perform the kind of analysis we wanted and at the same time resolve the above problems the following logical steps were evolved and translated into the necessary computer programs:

Item analyses. Each questionnaire item was analyzed against one or more variables of interest. In this way not only the percent of respondents choosing each item but also their average score on the variable(s) of interest could be used as a guide in assigning code or scale values for each alternative. The same was true for the non-respondents. For the students, questionnaire item responses were analyzed against an achievement composite.* For the teachers, questionnaire item responses were analyzed against the number of items that were correct on the teacher's vocabulary test.† Questionnaire item responses for the principal's questionnaire were analyzed against the principal's response to questions concerned with his annual salary, number of students enrolled in the school, the rural-suburban-urban location of the school and the proportion of children in the school from working class families.‡

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* See Mayeske et al., Technical Note No. 64, in the List of References, p.334 below.

† See Mayeske et al., Technical Note No.32, in the List of References.

‡ See Mayeske et al., Technical Note No. 62, in the List of References.

Coding and intercorrelation of variables. An approximate ten percent sample of students was drawn from the student master tapes at each grade level. The variables were then coded and intercorrelated.[*] For the teachers and principals a breakdown into elementary and secondary was made and correlations were computed for each breakdown.[†] The full number of teachers and principals included in the survey were used in these analyses.

Reduction of variables into indices. The intercorrelation matrices for the above steps were subjected to a series of factor analyses in order to obtain meaningful groupings of the variables, called indices.

Computation of index scores. The weights obtained from the factor analyses were used to compute index scores first by standardizing each variable to a mean of zero and a standard deviation of one, and then by multiplying each variable by its respective weight and finally summing these values. In this step index scores were computed for all of the students included in the Survey. Index means, standard deviations and intercorrelations were also computed.[‡]

Computation of school averages. The mean score for each school was computed for both students and teachers on the indices and variables that were carried along separately.

Merging of school data. The school means for students and teachers were merged with the school data for principals on a single tape (one tape for each of the five grade levels).

Computation of correlations and regressions. Correlations and regressions for each grade level were computed at this stage.

Table 2.3.1 gives a brief schematic summary of these various steps; some of them are described in detail in later chapters. Since the superintendent questionnaires could not give information about individual schools they were not used in the analyses.

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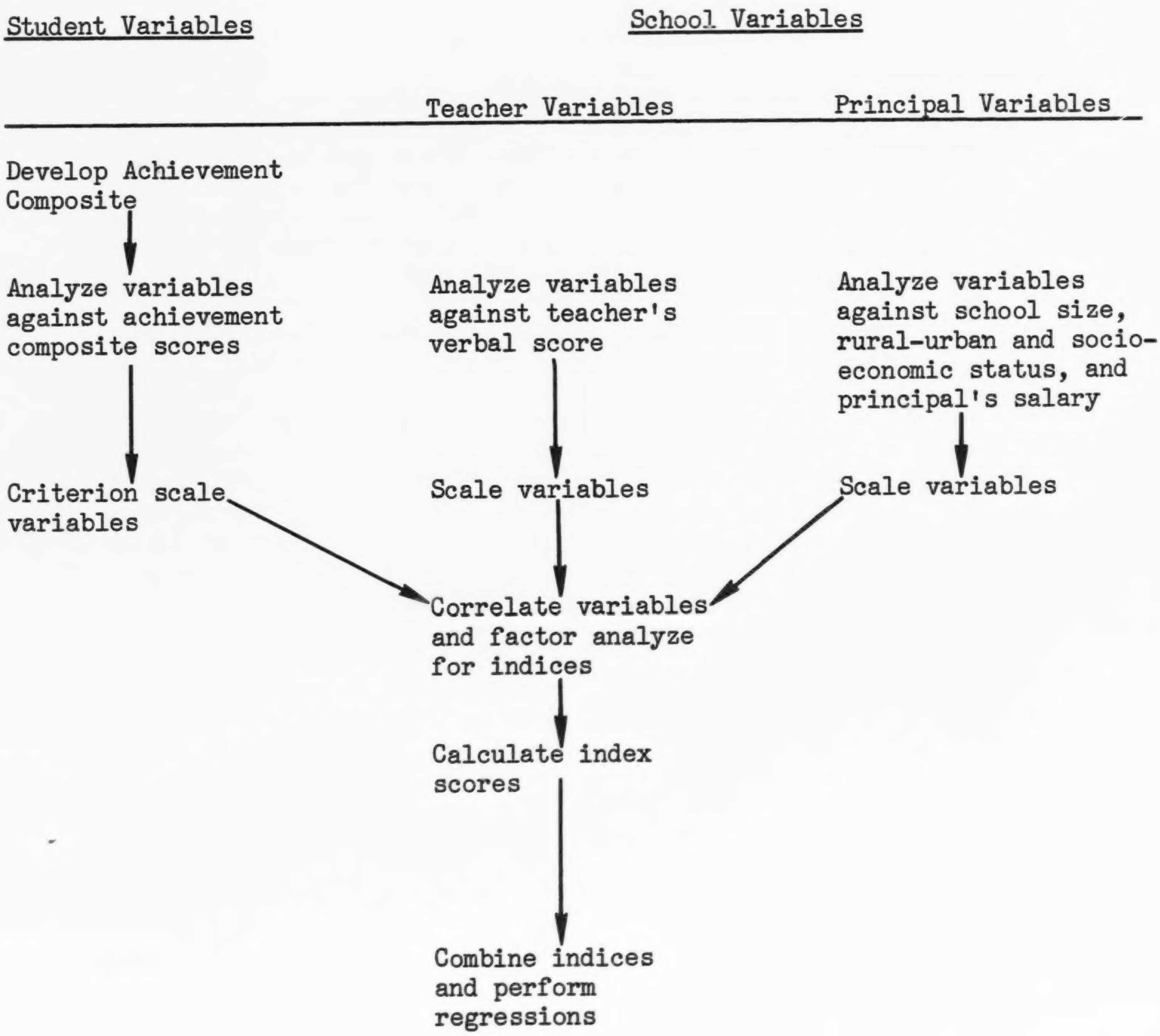
[*] These codes are given in Appendix III, and the means, standard deviations, and intercorrelations in Appendix IV.

[†] See Appendix VI for the teacher codes, Appendix VII for the teacher means, standard deviations and intercorrelations, and Appendixes IX and X for the same information on the principals.

[‡] See Appendix V (students), Appendix VIII (teachers), and Appendix X (principals).

Table 2.3.1. - Sequence of Steps Entailed in Data Analysis and Reduction


Student Variables
School Variables
Teacher Variables
Principal Variables
Develop Achievement Composite
Analyze variables against achievement composite scores
Analyze variables against teacher's verbal score
Analyze variables against school size, rural-urban and socio-economic status, and principal's salary
Criterion scale variables
Scale variables
Scale variables
Correlate variables and factor analyze for indices
Calculate index scores
Combine indices and perform regressions

3. DEVELOPING THE INDICES

3.1. Methodology

Our main goal in developing the indices was to reduce the more than 400 variables for easier data processing and analysis. But this had to be done in an empirically meaningful way. We therefore sought out groups of variables that not only correlated substantially with one another but were also psychologically or sociologically meaningful.

Earlier experience with the same data had shown that many of the variables were correlated to such an extent that when they were entered into a regression analysis, the contribution of a particular variable to a particular school outcome was microscopically small. For example, if values such as having a large library and having good facilities for science were kept separate in the analysis, the contribution of each separately might appear rather small just because these two variables are in fact correlated. It was hoped that by grouping similar kinds of correlated variables into indices we would make it easier to discern the contribution of each kind of variable to school outcomes. Another advantage of this procedure was that it reduced the sheer magnitude of regressions to be run.

The method adopted was to subject the intercorrelations of questions from the student, teacher and principal questionnaires to Principal Components analyses and Varimax rotations. These techniques are part of a broad family of techniques generally known as factor analysis (see Horst, 1965, in the List of References). The Principal Component technique extracts the roots and associated components in descending order of magnitude: the first root is the largest, the second root the next largest, etc. Components with a root of one or greater* were subjected to a Varimax rotation (for which see Kaiser, 1958). This is a technique for rotating the components into a position that may be meaningful. It attempts to maximize the high and low weights (or coefficients) for a component so that the variables that have high weights on this component can be thought of as belonging together. In this way, an interpretative label can be applied to what they have in common.

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* There is no single agreed-upon criterion for the number of components that should be rotated. In psychometrics, the rotation of components that have a latent root of one or greater has gained common usage through Kaiser's demonstration (1960) that for a principal component to be internally consistent "it is necessary and sufficient that the associated eigen value (or latent root) be greater than one."

In order to insure that the groupings of variables were meaningful a large number of subsets were subjected, one at a time, to Principal Components analyses and Varimax rotations. This approach was essentially iterative, i.e., variables that did not form meaningful groupings or blurred an otherwise meaningful grouping were eliminated, and the remaining variables reanalyzed.

The following sections describe the application of these techniques to the student, teacher and principal questionnaires.

3.2. Development of the Achievement Composite

One of our more important objectives in this study was to see in what manner responses to the different alternatives for a question related to one or more variables of interest. In this way we hoped to uncover non-linear relationships of the responses with the variable of interest. We also hoped to determine a value to be assigned to those students who failed to answer the question. With these purposes in mind a single composite measure of Achievement was developed from the tests that were administered as part of the survey. A detailed description of these tests, with examples of test items is given in the earlier report (Coleman, et. al., 1966, p. 575). Table 3.2.1 shows the overall procedure; it will be noted that more tests were administered at the higher than at the lower grade levels.

Table 3.2.1. Number and Kind of Tests Administered, by Grade

Test	Grade 12	9	6	3	1
Verbal ability	X	X	X	X	X
Nonverbal ability	X	X	X	X	X
Reading comprehension	X	X	X	X	
Mathematics achievement	X	X	X	X	
General information in 5 areas (Practical arts, girls; Practical arts, boys; natural sciences; social studies; humanities)	X	X			

Intercorrelations of the tests for the different grade levels are given in Table 3.2.2.* It will be seen that they are in the moderate-to-high range (50 to 80) for the ninth and twelfth grades, and in the low-to-high range (30 to 80) for the sixth and third grades. They also appear high enough to suggest that, to a large extent, they were measuring a common attribute. In order to test whether they were we employed a Principal Components analysis, which is a method that aims to express what is common to a set of variables by means of a smaller number of more basic components (Horst, 1965). If a strong first principal component was found among the intercorrelations of these tests, then each student's scores on the tests could be weighted by their

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* Correlations and index weights in this and the following tables have been rounded to two decimal places and leading decimals have been omitted.

Table 3.2.2. - Intercorrelations of Achievement Tests by Grade

Number in Matrix	Test Title	Twelfth/Ninth* 1	2	3	4	5
1	Nonverbal ability	100	60	59	62	60
2	Verbal ability	61	100	77	69	85
3	Reading comprehension	58	80	100	65	73
4	Mathematics achievement	56	60	56	100	71
5	General information	60	81	71	62	100

* The twelfth grade intercorrelations are below the main diagonal and the ninth grade above the main diagonal. The correlations for the twelfth grade are based upon 96,409 observations and 133,136 for the ninth grade.

Number in Matrix	Test Title	Sixth/Third* 1	2	3	4
1	Nonverbal ability	100	38	43	45
2	Verbal ability	60	100	46	47
3	Reading comprehension	59	79	100	59
4	Mathematics achievement	59	74	73	100

* The sixth grade intercorrelations are below the main diagonal and the third grade above the main diagonal. The correlations for the sixth grade are based upon 123,386 observations and 129,774 for the third grade.

Number in Matrix	Test Title	First* 1	2
1	Nonverbal ability	100	64
2	Verbal ability	64	100

* The correlations for the first grade are based upon 71,460 observations. All values have been rounded to two places of decimals and the decimal points omitted.

principal component weights and then summed. In this way a single index of achievement was created. Table 3.2.3 gives the weights for these first principal components at each grade level, with the percent of variance accounted for by each component. The latter is computed with the help of a theorem stating that the trace of a matrix (i.e., the sum of its diagonal elements) is equal to the sum of its roots (i.e., the total variance of the matrix). Since there are ones in the diagonal of the correlation matrix, the trace is equal to the number of variables. Consequently, dividing the amount of variance for each component by the number of variables, one obtains the proportion of total variance attributable to a principal component. Table 3.2.3 shows that the first principal component for grades twelve, nine and six account for about 75 percent of the total variance at each grade level. Since this is a relatively large percent for this kind of data, it indicates that a single index of achievement can be used. The weights used to obtain this index were the principal component weights in Table 3.2.3 (with the exception of the first grade, where unit weights were used).

Analyses were also conducted for different regional and racial groups. Comparison of results showed that the weights were highly similar, and consequently that a single set of weights for each grade level would be appropriate. These analyses have been given in detail in an earlier note (Mayeske and Weinfeld, Technical Note No. 21 in the List of References Cited). The main gist of these analyses was that the first principal component, accounting for most of the variance among the tests, can be interpreted to be what we called "general scholastic ability or achievement." It is that attribute which is common to the tests. The composite score developed with the use of these weights similarly represents "general scholastic achievement."

3.3. Development of the Student Indices

When the responses for a variable, such as the alternative responses chosen for a given questionnaire

Table 3.2.3. - Weights for First Principal Component of Test Intercorrelations

Number in Matrix	Test Title	Principal Component Weights Twelfth	 Ninth	 Sixth	 Third	 First*
1	Nonverbal ability	78	76	79	72	91
2	Verbal ability	91	92	90	74	91
3	Reading comprehension	87	87	90	81	
4	Mathematics achievement	85	85	88	82	
5	General information	90	91			
	Percent of variance accounted for by the First Principal Component	74.60	74.63	75.70	59.90	82.23

* The weights from the ninth grade were computed on a desk calculator and consequently fewer iterations were computed than for grades three, six and twelve which were calculated on a computer. With only two variables, the weights for the first principal component will be the same. The weights for the first grade are from one iteration (viz. the first centroid weights). The weights have been rounded to two decimal places and the decimal points have been omitted.

item, are analyzed against one or more criteria (i.e., dependent variable of interest), the resulting analysis is called a criterion scale analysis. All of the student questionnaire items for the different grade levels were analyzed against their respective achievement composite (see Mayeske et. al., Technical Note No. 64 in the List of References). These analyses were conducted in order to: (1) determine the number and percent of students responding to each questionnaire item alternative; (2) determine the number of students who failed to answer each question; (3) serve as a guideline in developing codes to scale the items for future analyses; (4) serve as a guideline in estimating missing data.

3.3.1. Examples of Criterion Scaling

The results of criterion scale analysis for the two questionnaire items of "Fathers Occupation" and "Number of Hours Per Day Spent Watching TV" are discussed below in order to indicate the meaning and usefulness of some of the results.

Table 3.3.1.1 presents the mean achievement composite scores, by grade, for students who knew their father's occupation. The overall mean for each grade level was set at 50 with a standard deviation of 10. It is of particular importance to note the trend of the achievement means for the "Don't know" and "Non-response" categories. The non-response means for the first and third grades are very close to the total mean of 50. In contrast, the non-response means for the sixth, ninth and twelfth grades are progressively lower. Thus to use the mean score of the respondents as a value to assign to the non-respondents would not introduce many systematic distortions at the first and third grade, but would do so at the higher grade levels. This is because the non-respondents at the higher grade levels differ systematically in their achievement scores from the respondents.

One can also note a trend for the mean of the "Don't know" responses to become lower at grades six through twelve. Students at the higher grade levels who don't know their father's occupation

Table 3.3.1.1. - Average Composite Achievement Scores of Students, by Father's Occupation

	Means for the Different Grade Levels				
Father's Occupation	First	Third	Sixth	Ninth	Twelfth
A. Technical	52.254	54.368	48.728	52.674	52.379
B. Official	53.613	54.481	52.766	52.299	52.653
C. Manager	53.665	54.586	53.570	53.451	52.771
D. Semi-skilled	50.025	50.061	49.995	50.060	49.510
E. Salesman	53.849	53.917	54.101	53.877	53.558
F. Farm or ranch manager or owner	53.573	52.897	50.166	50.397	50.707
G. Farm Worker	46.430	45.684	45.532	43.316	42.478
H. Workman or laborer	46.487	45.923	49.572	48.657	47.221
I. Professional	55.466	56.833	55.299	56.597	56.012
J. Skilled worker or foreman	51.422	50.764	51.438	51.000	50.607
K. Don't know	45.506	45.698	44.086	43.057	41.850
Non-response	49.031	48.787	45.002	42.599	42.338
Total	50.000	50.000	50.000	50.000	50.000

have lower relative achievement than students at grades one and three who don't know their father's occupation.

Table 3.3.1.2 gives the mean achievement composite scores of those twelfth-, ninth- and sixth-grade students (the question was not asked at the lower grade levels) who indicated that they spent various amounts of time watching TV. This table shows that there is a curvilinear relationship between TV watching and the achievement composite, and that the nature of this relationship alters at the different grade levels. The general trend is for the achievement levels of students who say they watch TV not at all, very little or very much to be lower than the achievement levels of students who say they watch TV an intermediate number of hours. At the sixth grade there is a slight reversal between half an hour per day and none. At the twelfth grade, however, the higher-achieving students spend $1\frac{1}{2}$ hours per day or less watching TV while the lower-achieving students say they spend upwards of 2 hours per day. For all grade levels the non-respondents have very low achievement levels.

These analyses can be very helpful in determining what codes or scale values to use in scoring the variables. For instance, on the basis of the information in Table 3.3.1.1 one could rank the occupations by their mean values, assigning a high rank to a high mean and a low rank to a low mean. These ranked values could then be used as codes or scale values. Thus, if a student indicated that his father was a "Professional" he would be assigned the highest rank, and if a student indicated that he did not know what his father's occupation was he would be assigned one of the lower ranks. However, because there is a curvilinear relationship between Number of Hours Per Day Spent Watching TV (in Table 3.3.1.2) and the achievement composite, the kinds of codes or scale values that should be used are not so obvious. If one coded the different categories to reflect the increasing number of hours spent watching TV, the underlying curvilinear relationship would be obscured. This is because both high and low code values would have low achievement levels associated with them, while intermediate code values would have high achievement levels associated with them. An alternative course would be to give the categories with high achievement levels a high code value and those with low achievement levels a low code value. This would serve to increase the relationship of the item with achievement, but at the same time it would alter the meaning somewhat. The variable or item would now be coded to show there was an optimum number of hours per day spent watching TV in relation to achievement.

When the mean of the criterion variable for each category is used as the code or scale value the variable is said to be criterion scaled. For example, a twelfth-grade student who indicated that he spent half an hour per day watching TV would be assigned a value of 52.001 while a student who indicated that he spent 4 or more hours would be assigned a value of 45.839 (see Table 3.3.1.2). This technique maximizes the linear relationship of the item or variable with the criterion variable.* Most of the student items were scaled using this technique.

The reader may wonder just what advantages and disadvantages accrue from using criterion-scaled variables. Criterion scaling has the desirable properties of:
(1) Providing reasonable values for the non-respondents and "Don't Know's"
(2) Indicating the effect of using these latter values for the non-respondents and "Don't Know's" (viz. the extent of their departure from the mean values for the other respondents)
(3) Maximizing the linear relationship of the variable or item with the criterion, and therefore increasing the stability of the linear regression model.

The possible disadvantages of using criterion scaling are that:
(1) It may distort the meaning of the item or variable so that it is not readily interpretable

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* A technical exposition of the mathematical and empirical properties of criterion-scaled variables is given in Appendix I.

Table 3.3.1.2. - Average Composite Achievement Scores of Students Indicating Number of Hours Spent Watching TV *

	Means for the Different Grade Levels		
Number of Hours Per Day	Sixth	Ninth	Twelfth
A. None or almost none	47.087	48.262	50.670
B. About ½ hour a day	45.796	49.291	52.001
C. About 1 hour a day	50.776	52.058	51.808
D. About 1½ hours a day	52.950	52.968	51.485
E. About 2 hours a day	52.505	51.927	49.790
F. About 3 hours a day	52.234	51.348	48.803
G. 4 or more hours a day	49.051	47.280	45.839
Non-response	41.886	39.479	41.771
Total	50.000	50.000	50.000

* Does not include televised instructional materials presented in school.

(2) It may so alter the sequence of codes or scale values of an item that one cannot extrapolate a relationship beyond the observed categories or values of that item (e.g. we cannot generalize the relationship to say that watching TV six hours a day will be associated with even lower achievement levels than for four hours a day).

However, these apparent disadvantages did not prove detrimental to the purpose in hand. Most of the relationships were linear or nearly linear,* and even when they were curvilinear meaningful interpretations were still possible (see below, Appendix III). In addition, comparison of the results obtained at different stages in the analysis from criterion-scaled variables with results obtained from variables that were coded subjectively showed differences for some of the attitudinal items but not for Achievement.†

3.3.2. List of Variables for Each Grade Level

Most of the questions asked of ninth-grade students were also asked of twelfth-grade students. The analyses performed on these two grade levels can therefore be compared directly. At the lower grade levels, however, fewer questions were asked and the language was often much simplified from one grade to the next. These differences make direct comparisons at the lower grade levels much more difficult. To these difficulties we can add that at the first grade the questionnaires were filled out by the teachers for the student, whereas at the third grade the questions were read aloud by the teacher before being filled out by the student, and at the sixth grade the student read and filled out the questionnaire himself. Thus the nature of the non-responses and errors are bound to be different at these different grade levels. What follows is the list of variables used (the codes used in scaling these variables and their interpretation are given in Appendix III, as are the grade levels at which each item was asked).

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* See Beaton, 1967.

† See Appendix XII.

STUDENT QUESTIONNAIRE VARIABLES

Sex
Age
Mother's Birthplace
Area in Which the Student Has Spent Most of His Life
Type of Community in Which Student Has Spent Most of His Life
Racial-Ethnic Differences
Number of Persons Living in the Home
Number of Siblings
Number of Older Siblings
Number of Older Siblings Dropped Out of High School
Parents Speak a Foreign Language in the Home
Student Speaks a Foreign Language Outside of School
Number of Rooms in the Home
Who Acts as Father
Who Acts as Mother
Father's Occupational Level
Father's Educational Level
Mother's Educational Level
Family's Source of Income
Mother's Work
Mother's Desire for Child's Academic Excellence
Father's Desire for Child's Academic Excellence
School Discussions With Parents
Father's Desire for Child's Educational Level
Mother's Desire for Child's Educational Level
Frequency of Parents' PTA Attendance
Pre-School Reading
Appliances in the Home
Reading Materials in the Home
Kindergarten Attendance
Attended Nursery School
Frequency of Changes in School
Recency of Change in School
Desire for Higher Education
College Plans
Number of Books Read During Summer

Hours Watching TV
Attitude Towards School
Students Own Desire to Excel
Study Time
Voluntary Absences
Extra-Curricular Activities
Outside Work
Social Rating
Brightness
Teacher's Expectations for Student to Excel
Life Condition
Work Success
Getting Ahead
Success in Life
Education in Job
Sacrifice
Want to Change
Learning Problem
Teaching Rate
Successful Life
Tough Job
Ability to Do Well
Occupational Level Preferred
Gets Along Well With Classmates
Avoids Disturbing Classmates
Arrives School on Time
Shows Desire to Learn
Shows Good Speaking Vocabulary
Pays Attention in Class
Moves From Activity to Activity Progressively
Assumes Responsibility
Attended Project Headstart
Grade Last Year
Liked by Classmates
Good Student
Likes School
Non-Verbal Test Score
General Information, Total
Verbal Ability
Reading Comprehension
Mathematics Achievement

These variables were intercorrelated using a computer program that allows for an unequal number of observations on each variable. Unequal observations were usually caused by a student giving two responses to a question -- either erroneously or because he did not adequately erase one of the answers (the machine scoring allowed only one answer). In order to reduce the computer processing time involved in developing the indices, random samples of approximately ten percent of the students were taken at each grade level. The total sample size, random sample size, and range of missing observations are given below for the different grade levels:

Grade Level	Total Sample Size	Random Sample Size	Range of Missing Values
12	96,409	10,048	600
9	133,136	12,000	600
6	123,386	11,185	1,100
3	129,774	12,072	2,000
1	71,460	6,890	500

For most of the variables there were few, if any, missing observations. For two or three of the variables, however, the missing observations did range as high as indicated in the above table. The means, standard deviations and intercorrelations for these variables are given in Appendix IV.

3.3.3. Interpretation of the Indices

The intercorrelations of the above variables for each grade level were subjected to Principal Components analyses and Varimax rotations. Some of the variables -- sex and age, for instance, with racial-ethnic differences and attitudes towards racial groups -- were not entered into the analyses at all. The reason was that we wanted to retain them as separate variables for special studies. The individual tests were not included either, since the composite achievement score was to be used in later analyses as a dependent variable. In addition, a number of variables that were eliminated from the ninth-grade analyses were also eliminated from the twelfth-grade analyses.

The analyses were performed in a sequence starting with the ninth grade followed by the twelfth, sixth, third and first grades. Since the analyses for the ninth and twelfth grades were somewhat different from the others they will be discussed first.

In both the ninth and twelfth grades the same 47 variables were subjected to a Principal Components analysis. The Amount of Variance for each Principal Component and the Cumulative Percent are given in Appendix IV. The percent of variance of a component is computed with the help of the same theorem as in Table 3.2.3 (p. 27).

Components with roots of one or greater were subjected to Varimax rotations. For the ninth grade, ten components were rotated; for the twelfth grade, eleven. (These rotated components are given in Appendix IV.) These components accounted for 45 and 49 percent, respectively, of the total variance. Seven of these rotated components were interpretable. They were considered to be essentially the same for both grade levels.

The other rotated components were deleted, either because the few variables on them could best be retained as separate variables or because the variables that were related to them nevertheless belonged more meaningfully to other components. For example, PTA Attendance, Extra-Curricular Activities, and Foreign Language Spoken By Parents were retained as separate variables.

Since the rotated components for the ninth and twelfth grades were considered to be highly similar in their content and meaning it seemed desirable to retain the same meaningful components for the lower grades. However, when the variables for the lower grades were subjected to Principal Components analyses and Varimax rotations meaningful components were not obtained; some of the components coalesced while others did not appear at all. This was due in part to the smaller number of variables at the lower grade levels. As a consequence of this result, subsets of variables at the lower grade levels that were considered to be representative of the indices (or meaningfully rotated components) for the ninth and twelfth grades were each subjected to a Principal Components analysis. The weights from this first Principal Component were then taken as the index weights to be used in obtaining index scores.

The following tables contain those rotated components which, since they were found to be meaningful, will be referred to as indices. All variables other than those listed in the tables are considered to have zero weights for a particular index. A variable can belong to one and only one index. This rule tends to keep the intercorrelations of the index scores low, since a variable would tend to increase the correlation between two indices if it contributed positively to both of them.

Since the sixth-, third-, and first-grade weights are from the first Principal Component of the intercorrelations among the variables indicated, the percent of variance accounted for by that component is given at the bottom of the table. It should also be noted that the interpretations in the following tables are based on the results obtained for the ninth and twelfth grades. All weights have been rounded to two places of decimals and the decimal points have been omitted.

Table 3.3.3.1. - Index I: Expectations for Excellence

Title	Weights Twelve	Nine	Six	Three
Mother's Desire for Child's Academic Excellence	84	83	92	91
Father's Desire for Child's Academic Excellence	79	81	92	91
Student's Own Desire to Excel	67	64		
Teacher's Expectations for Student to Excel	58	50		
Percent of Variance Accounted for by the First Principal Component			84.96	82.21

Table 3.3.3.2. - Index II: Socio-Economic Status

Title	Weights Twelve	Nine	Six	Three	One
Type of Community in Which Student Has Spent Most of His Life	39*	53			
Number of Siblings	50	53	44	42	46
Number of Rooms in the Home	30	22*		47	
Father's Occuaptional Level	63	57	61	72	69
Father's Educational Level	71	66	78	84	85
Mother's Educational Level	66	64	75	80	81
Appliances in the Home	28**	28**	42**	27**	20**
Reading Materials in the Home	29	29	43	28	21
Percent of Variance Accounted for by the First Principal Component			38.51	38.96	42.35

Table 3.3.3.1 shows the weights for an index involving the student's own views of the expectations that he, his parents and his teacher hold for his academic performance. A student with a high score on this index feels that both his mother and his father want him to be one of the best students in his class. The student also feels that he himself would like to be one of the best students in his class, and that his teacher shares this view. The name of the index is Expectations for Excellence.

Table 3.3.3.2 shows the weights for an index containing most of the variables that are commonly thought to be indicators of socio-economic status. A student with a high score on this index tends to come from either a suburb of a large city or a medium-sized city, and to have a father who is engaged in a professional, sales, managerial or technical job. He also tends to have one or two siblings and to live in a six-to-ten-room house. Both his mother and his father come from the higher educational strata and there are a relatively large number of appliances and reading materials in his home. The name of the index is Socio-Economic Status.

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* The single asterisk in Table 3.3.3.2 indicates that the variable came out higher on another index but was considered to belong more meaningfully to this index.

** The double asterisk in Table 3.3.3.2 indicates that the variable was not included in the component analysis because it was so highly correlated with reading materials in the home, but instead was given almost the same weight as reading materials in the home.

Table 3.3.3.3. - Index IV: Attitude Toward Life

	Weights			
Title	Twelve	Nine	Six	Three
Life Condition	34	25*		
Work for Success	43	41		
Difficulty Getting Ahead	61	62		
Education in Job	46	49		
Sacrifice to Get Ahead	32*	20*		
Want to Change	45	53	54	
Learning Problems	55	56	56	
Teaching Rate	56	57		
Successful Life	58	60	68	
Ability To Do Many Things Well			53	
Liked By Classmates			45	100[†]
Percent of Variance Accounted For By The First Principal Component			30.93	

Table 3.3.3.4. - Index III: Social Confidence[††]

	Weights	
Title	Twelve	Nine
Outside Work	50	57
Social Rating	15	31
Success in Life	49	45
Tough Job	60	56
Ability to Do Many Things Well	74	51

Table 3.3.3.3 shows the weights for an index containing eleven variables related to the student's general outlook on life, especially as related to his role as a student. A student with a high score on this index feels that people who accept their condition in life are not necessarily happier, and that hard work is more important for success than good luck. He also believes that when he tries to get ahead he doesn't encounter obstacles, and that with a good education he won't have difficulty getting a job. He would not sacrifice everything to get ahead, and would not want to change himself. He does not think he would do better if his teachers went slower; he does think people like him have a chance to be successful. The name of the index is Attitude Toward Life.

Table 3.3.3.4 shows the weights for an index containing variables related to a special aspect of the student's general attitude. A student with a high score on this index works either not at all or less than 20 hours a week at an outside job. In addition, he feels that he has a high social rating in the school, and is of the opinion that lack of success in life is not necessarily an individual's own fault. As for his own success, he says that the tougher he finds a job the harder he works at it, and that he can do many things well. In short, he tends to find life a breeze, even if it does require some effort. For this reason, the index is called Social Confidence.

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* The asterisks in Table 3.3.3.3 indicate that these variables had higher weights on other indices but belonged more meaningfully on this index, even with a low weight.

† There was only one variable at the third grade which was indicative of this index.

‡ Social Confidence was highly correlated with Attitude Toward Life and, at the lower grade levels, coalesced with many of its variables. Consequently, it was not carried further as an index.

Table 3.3.3.5. - Index V: Family Structure and Stability

Title	Weights Twelve	Nine	Six	Three	One
Area in Which Student Has Spent Most of His Life	-04	10*			
Who Acts as Your Father	85	84	83	72	72
Who Acts as Your Mother	62	60	77	75	77
Family's Source of Income	76	73			
Mother's Work	21	20*	28	57	70
Recency of Change in School	13	20*			
Frequency of Change in Schools			34	36	
Percent of Variance Accounted For By The First Principal Component			37.19	38.33	53.45

Table 3.3.3.6. - Index VI: Educational Desires and Plans

Title	Weights Twelve	Nine	Six	Three
Father's Desire for Child's Educational Level	83	81		
Mother's Desire for Child's Educational Level	85	82		
Student's Desire for Higher Education	83	80	71	
Student's Plans for College	72	74		
Brightness	30	29		
Occupational Level Preferred	59	46	64	
Good Student			65	100†
Percent of Variance Accounted for by the First Principal Component			44.88	

Table 3.3.3.5 shows the weights for an index containing variables related to the student's family circumstances. A student with a high score on this index has his regular father and mother (as opposed to some substitute figure) fulfilling their respective roles. The major source of family income is the father's salary; the mother either does not work or works only part-time. If this student has changed schools (and he tends not to have), it was not within the last three years. Nor does his family move often; if they do, it tends to be across state lines. The name of the index is Family Structure and Stability. It will be seen that the weights for the ninth and twelfth grades compare favorably except for the first variable. Here the twelfth-grade weight becomes slightly negative, though it is still near zero. Inspection of the correlations of these variables with the first variable shows that they are low but positive. Hence the small weight for the first variable might as well be regarded as zero.

Table 3.3.3.6 shows the weights for an index containing variables related to the student's chances of receiving further education. A student with a high score on this index reports that both his mother and father want him to attend college, and that he himself both wants and plans to do so. He feels that he is one of the brightest students in his grade, and aspires to one of the higher occupational levels. The name of the index is Educational Desires and Plans.

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* The asterisks in Table 3.3.3.5 indicate that these variables had higher weights on other indices but belonged more meaningfully on this index, even with a low weight.
† This was the only variable that was indicative of this index at the third grade.

Table 3.3.3.7. - Index VII: Study Habits

Title	Weights			
	Twelve	Nine	Six	Three
School Discussions With Parents	10*	34	53	
Pre-School Reading	06*	33	60	70
Number of Books Read During Summer	06*	48	58	75
Number of Hours Watching TV	35	49	43	49
Attitude Towards School	54	47	56	
Study Time	46	62	25	
Voluntary Absences	48	34*		
Percent of Variance Accounted For By The First Principal Component			25.59	43.03

Table 3.3.3.8. - Index VIII: Classroom Behavior

Title	Weights
	One
Gets Along Well With Classmates	54
Avoids Disturbing Classmates	66
Arrives at School on Time	41
Shows Desire to Learn	77
Shows Good Speaking Vocabulary	61
Pays Attention in Class	84
Moves From Activity to Activity Progressively	82
Assumes Responsibility	77
Percent of Variance Accounted For By The First Principal Component	47.96

Table 3.3.3.7 shows the weights for an index containing variables related to the student's interpretation of his own role. A student with a high score on this index had daily or weekly discussions with his parents about his school work, and was read to frequently before he started school. He read many books during the summer and habitually watched TV from one to three hours per day. He reported that he would do most anything to continue in school, and backed up his words by studying from one to three hours a day outside school, and by seldom staying away from school just because he wanted to. The name of the index is Study Habits. It will be noted that although the weights on the first three variables are much lower for twelfth-grade students than for ninth-grade students, intercorrelations of these variables for both grade levels show them to be similar.†

Table 3.3.3.8 shows the weights for an index containing variables related to the first-grade teacher's perception of the student's classroom behavior. A student with a high score on this index is regarded as "intelligent" and "well-adjusted". The name of the index is Classroom Behavior.

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* The asterisks in Table 3.3.3.7 indicate that these variables had higher weights on some other index but were more meaningful on this index.

† See Appendix IV.

3.3.4. Index Score Intercorrelations

Index scores were computed for each student on the indices for his grade level. The variables used to form each index were first standardized to a mean of zero and a standard deviation of one,* then multiplied by their respective index weights and summed to obtain an index score. The index score intercorrelations, as well as their correlations with selected other variables, are given in the tables that follow (see also Appendix V). Since some of the weights were different for the ninth-grade index and its twelfth-grade counterpart, and since we wanted to make the weights as comparable as possible, the ninth-grade index weights were used to obtain the index scores for both the ninth and twelfth grades. The respective principal component weights were used for the other grade levels.

Table 3.3.4.1 shows that, with the exception of Social Confidence and Attitude Toward Life, all the indices are moderately correlated with one another. The values are unusually high for correlations obtained with the use of factor analytic techniques. The reader should bear in mind, however, that the variables have been scaled so as to be maximally related to the Achievement Composite. When the individual variables are weighted and summed, the sums are more highly correlated with the Achievement Composite than are the individual variables. This is because what they have in common tends also to be common with the Achievement Composite -- that is, unless one rigidly adheres to all the orthogonal Varimax weights, a procedure that usually sacrifices a great deal of meaning. It will also be noted that the indices have lower intercorrelations for the twelfth grade than for the ninth grade. This appears to reflect the influence of the dropouts: less variability among students, and hence lower correlations.

Table 3.3.4.2 gives the index intercorrelations for the sixth, third and first grades. The intercorrelations for the sixth-grade indices tend to be much higher than for the third- and first-grade indices. These differ-

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* Using the means and standard deviations in Appendix IV to subtract and divide by, respectively.

Table 3.3.4.1. - Index Score Intercorrelations for the Ninth and Twelfth Grades*

		Ninth/Twelfth						
		I	II	III	IV	V	VI	VII
I	Expectations	100	26	18	28	18	51	34
II	Socio-Economic Status	40	100	22	29	36	48	34
III	Social Confidence	45	31	100	84	25	22	41
IV	Attitude Toward Life	47	38	85	100	26	33	40
V	Family Structure and Stability	37	47	33	33	100	20	38
VI	Educational Desires and Plans	54	54	36	45	33	100	35
VII	Study Habits	54	45	52	50	48	50	100

*The index intercorrelations above the main diagonal (descending from left to right with 1.00 as an entry) are for the twelfth grade and those below the main diagonal are for the ninth grade. These correlations are computed on the full sample sizes of 96,409 twelfth grade and 133,146 ninth grade students. All coefficients have been rounded to two decimal places and the decimal - points have been omitted.

Table 3.3.4.2. - Index Score Intercorrelations for Sixth, Third and First Grades*

Third/Sixth

		I	II	III	IV	V	VI
I	Expectations	100	28	52	37	44	49
II	Socio-Economic Status	14	100	37	36	40	40
III	Attitude Toward Life	19	10	100	47	52	66
IV	Family Structure and Stability	25	27	19	100	35	47
V	Educational Desires and Plans	24	17	21	19	100	52
VI	Study Habits	22	30	18	28	20	100

*The index score intercorrelations above the main diagonal are for the sixth grade and those below the main diagonal are for the third grade.

First Grade

		II	IV	VIII
II	Socio-Economic Status	100	19	22
IV	Family Structure and Stability	19	100	11
VIII	Classroom Behavior	22	11	100

These correlations are computed on the full sample size of 123,386 sixth grade students; 129,774 third grade students and; 71,460 first grade students. All coefficients have been rounded to two decimal places and the decimal points omitted.

ences may be due in part to the different number and kinds of items that were used to represent some of the indices at the different grade levels. For example, five items were used to represent the Attitude Toward Life index at the sixth grade, but (out of necessity) only one at the third grade. The indices represented most adequately at grades six, three and one are Socio-Economic Status and Family Structure. Even these, however, fluctuate greatly in their intercorrelations. Since both the nature of the non-responses and the definition of the indices vary at these lower grade levels, caution should be employed in interpreting observed differences from one grade level to the next. Greater confidence, however, might be placed in the observed similarities between the top two grade levels and the others.

3.3.5. Index Correlations With Selected Other Variables

More can be learned about these indices from their degree of correlation with other variables not included in the index development. Some of these selected correlations are given in the following tables.*

Table 3.3.5.1 gives the correlations of the indices with three variables: the Achievement Composite, Racial-Ethnic Differences, and Sex. The reader will note that in this table the Achievement Composite is listed both as a variable and as an index in order to show its relationship with the other variables. Some of the indices here show a high degree of stability in their correlations. For example, Socio-Economic Status (SES) has a consistently high relationship with Achievement except at the first grade. In fact, all of the correlations at the first grade tend to be lower due to the high proportion of non-respondents who were at the mean of the Achievement Composite, and were assigned this value as a score. The SES index tends also to have a consistently high relationship with Racial-Ethnic Differences. The Family Structure index tends to yield a consistent pattern of relationships with Achievement, Racial-Ethnic Differences and Sex. Apparently white, high-achieving girls enjoy (or say they enjoy) a more

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* See also Appendix V.

Table 3.3.5.1. - Index Correlations With Achievement, Racial-Ethnic Differences and Sex

Index Number and Title

Variable Title	Grade Level	I Expctns	II SES	IV Att. To Life	V Fam. Strctr & Stability	VI Ed. Desires and Plans	VII Study Habits	VIII Classroom Behavior	IX ACH
Achievement	Twelve	35	48	42	23	49	23		
Composite	Nine	39	54	47	33	51	36		
	Six	26	50	38	33	48	37		
	Three	17	49	13	28	24	34		
	One		38		13			37	
Racial-Ethnic	Twelve	00	35	28	27	06	13		45
Differences*	Nine	17	41	30	35	16	24		47
	Six	17	37	22	30	22	22		49
	Three	10	40	08	28	12	21		41
	One		40		25			15	40
Sex†	Twelve	08	13	05	20	16	14		07
	Nine	20	26	21	34	16	36		13
	Six	09	09	16	20	15	25		09
	Three	12	04	12	18	11	16		09
	One		00		03			12	05

*Scored high for white and Oriental, low for Negroes, Puerto Ricans, Mexicans and Indians.

†Scored high for female.

favorable Family Structure. The relationship of the Achievement Composite with Racial-Ethnic Differences is remarkably consistent for the different grade levels. Sex is also fairly consistent in its relationship with Achievement, girls being slightly higher achievers than boys.

Some of the indices show differing patterns of relationships for the different grade levels. For example, for the third grade Attitude Toward Life shows a drop in its correlation with both Achievement and Racial-Ethnic Differences. This drop is due in large part to the smaller number and differing nature of the variables used to represent this index at the lower grade levels.

These results suggest that it might also be instructive to conduct some systematic regressions. Several of the indices, such as Socio-Economic Status and Family Structure, can be regarded as influences that affect the student but are not directly affected by the school. Others, such as Expectations, Attitude Toward Life, Educational Desires and Plans, Study Habits and Achievement, can be viewed as being influenced by both the family and the school. It may therefore be best to keep this latter set as dependent variables, and then see what other indices and variables can be used in estimating them through multiple regression techniques. It is particularly instructive to see how the Home Background measures of Socio-Economic Status (SES) and Family Structure (FSS) relate to these other indices. Table 3.3.5.2 gives the squared multiple correlations (rounded to two places of decimals) at the different grade levels for SES alone (column 1), and for SES and FSS combined (column 2). The difference (after rounding) between these two squared correlations is given in the last column. It indicates the extent to which FSS is associated with Achievement that is independent of or unrelated to SES. A large value may indicate that FSS plays an important role in its relationship with the dependent variables. Inspection of the Difference column in Table 3.3.5.2 shows that FSS tends to have its largest unique association for Expectations at grades six, three and nine respectively, and very little at grade twelve.. Although the values differ somewhat,

Table 3.3.5.2.- Squared Multiple Correlations*for Regression of Achievement and Attitude Indices on Home Background

Index Number	Title	Grade Level	SES (1)	SES & FSS (2)	† Difference (2) - (1)
I	Expectations	Twelve	07	08	01
		Nine	16	20	04
		Six	08	16	09
		Three	02	07	05
IV	Attitude Toward Life	Twelve	08	11	03
		Nine	15	18	03
		Six	14	27	13
		Three	01	04	03
VI	Educational Desires and Plans	Twelve	23	23	00
		Nine	29	29	01
		Six	16	21	05
		Three	03	05	02
VII	Study Habits	Twelve	12	19	08
		Nine	20	30	10
		Six	16	28	13
		Three	09	13	04
VIII	Classroom Behavior	One	05	05	00
IX	Achievement	Twelve	23	23	00
		Nine	29	30	01
		Six	25	27	03
		Three	24	26	02
		One	15	15	00

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* Rounded to two places of decimals

† Apparent errors due to rounding after subtraction

this same trend tends to hold for Attitude Toward Life, except that FSS also tends to make a slight contribution at grade 12. Family Structure has virtually no unique association with Educational Desires and Plans at grades nine and twelve. At least some of this variation may stem from the fact that different variables were used to represent the indices at grades six and three. Family Structure has a substantial unique association with Study Habits at all the grade levels but particularly at grades six, nine and twelve. It has virtually no relationship with Classroom Behavior or Achievement except at grades six and three, where there is a slight unique relationship. In summary, Family Structure appears to play its most important role in the development of Study Habits. It also contributes somewhat to the development of Attitudes Toward Life and Expectations, and has a small role at grades six and three in Achievement.

Table 3.3.5.3 contains the squared multiple correlations (rounded to two places of decimals) and their differences (after rounding) for various combinations of Home Background, Race and Sex. The first question one can ask in perusing this table is: What is the association of Racial and Ethnic differences after students have been equated for differences in their Home Background? The answer is to be found in columns (1) and (2) and in the differences that appear in the column headed (2) - (1). These columns show that, at grades 9 and 12, Racial and Ethnic differences have a substantial unique association with Achievement. For the same grades, however, the association of Racial and Ethnic differences with Attitude Toward Life was very slight, as was its association with Expectations and with Educational Desires and Plans at grade 12.

Another crucial question here is whether Sex is related to these indices after students have been equated for differences in Home Background. Columns (1) and (4), with their differences, provide the answer: Sex appears to have a unique association with Study Habits for the third, sixth and ninth grades, and with Classroom Behavior at the first grade. However, a related question immediately arises as to whether or not Sex is needed as an explanatory variable at this stage. But if we compare the column headed (3) - (2) with the

Table 3.3.5.3. - Squared Multiple Correlations*for Regression of Achievement and Attitude Indices on Home Background, Racial-Ethnic Differences, and Sex

Index Number	Title	Grade Level	HB† (1)	HB & Race (2)	HB, Race & Sex (3)	HB & Sex (4)	(2)-(1)	Differences‡ (4)-(1)	(3)-(2)	(3)-(4)
I	Expectations	Twelve	08	09	09	08	01	00	00	01
		Nine	20	20	20	20	00	00	00	00
		Six	16	16	16	16	00	00	00	00
		Three	07	07	07	07	00	01	01	00
IV	Attitude Towards Life	Twelve	11	14	14	11	03	00	00	03
		Nine	18	19	20	18	02	01	01	02
		Six	27	27	27	27	00	00	00	00
		Three	04	04	05	05	00	01	01	00
VI	Ed. Desires and Plans	Twelve	23	24	25	24	01	01	01	01
		Nine	29	30	30	29	01	00	00	01
		Six	21	21	21	21	00	01	01	00
		Three	05	05	06	06	00	01	01	00
VII	Study Habits	Twelve	19	19	20	19	00	00	00	00
		Nine	30	30	33	33	00	03	03	00
		Six	28	28	31	31	00	02	02	00
		Three	13	14	15	15	00	01	01	00
VIII	Classroom Behavior	One	05	06	07	07	00	02	02	00
IX	Achievement	Twelve	23	[illegible]	32	23	09	00	00	09
		Nine	30	36	37	30	07	00	00	07
		Six	27	37	37	27	09	00	00	09
		Three	26	31	31	27	04	00	00	04
		One	15	22	22	15	07	00	00	07

* Rounded to two places of decimals after computation.

† The abbreviation for Home Background is HB. HB is comprised of SES and FSS.

‡ Apparent errors due to rounding after subtraction.

one headed (3) - (4) we can see that Sex continues to have a unique association not only with Study Habits and Classroom Behavior, but with Achievement, Attitude Towards Life, Educational Desires and Plans, and Expectations. Hence Sex may well be needed as an explanatory variable in predicting Study Habits and Classroom Behavior. Racial-Ethnic differences, on the other hand, are important in analyzing Achievement (at all grade levels), Attitude Towards Life (at grades nine and twelve), and Educational Desires and Plans, with Expectations, (at grade twelve).

SUMMARY

This section presented the results of analyses concerned with meaningful reduction of the questionnaire items to a manageable number. Factor analytic techniques -- viz., Principal Components analyses and Varimax rotations -- were used to determine how to group sets of correlated variables into indices. The indices developed were found to be similar for ninth- and twelfth-grade students. The sixth, third and first grades were brought into the same meaningful framework by grouping items according to the ninth- and twelfth-grade results. The indices obtained for the different grade levels were labeled:

I. Expectations for Excellence*
II. Socio-Economic Status†
III. Social Confidence‡
IV. Attitude Towards Life*
V. Family Structure and Stability
VI. Educational Desires and Plans*
VII. Study Habits*
VIII. Classroom Behavior§

All of these indices were found to be moderately correlated with Achievement, Racial-Ethnic differences and Sex.

Multiple regression analyses showed that Socio-Economic Status and Family Structure and Stability were important variables in predicting Achievement and other attitudinal indices. Other analyses showed that, after students had been equated for differences in Socio-Economic Status and Family Structure and Stability, Sex was important in explaining Study Habits and Racial-Ethnic differences in explaining Achievement and Attitude Towards Life.

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* Grades 3,6,9 and 12 only.
† All grade levels.
‡ Grades 9 and 12 only.
§ Grade 1 only.

3.4. Development of the Teacher Indices

All analyses were conducted for two groups of teachers labeled Elementary and Secondary. Teachers were sorted into one or other of these groups on the basis of their response to a question asking them what was the highest grade they taught. Those who said they taught the ninth grade or higher were included in the group labeled Secondary. Similarly, those who said they taught the eighth grade or lower were included in the group labeled Elementary.

The teacher questionnaire contained 102 questions. Of these, 72 were concerned with various aspects of the teacher's education, work experience, working conditions, preference for different kinds of students, involvement in guidance activities, opinions on social issues, and other items relating to the teacher's professional role. The latter part of the questionnaire consisted of a thirty-item contextual vocabulary test. We decided to delete 26 of the first 72 items from the analyses because they seemed too specialized, or could best be retained as single items for special studies, or were of peripheral interest. Thus many of the items concerned with integration were judged to be best kept as single items for special studies. Likewise, many of the counseling questions were of only peripheral interest to us.

3.4.1. List of Variables

The variables used in the analyses are listed below. The manner of coding, with the detailed numerical codes and the values assigned to non-responses are given in Appendix VI.*

TEACHER QUESTIONNAIRE VARIABLES

(1) Sex
(2) Age
(3) Area Spent Most of Life
(4) Type/Size of Community Spent Most of Life

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* For the methods used see Mayeske et al., Technical Note No. 32 in the List of References. The actual questionnaire items are given in Appendix VI.

(5) Racial-Ethnic Differences
(6) Area Graduated from High School
(7) Father's Occupational Level
(8) Father's Educational Level
(9) Mother's Educational Level
(10) Highest Degree Held
(11) Undergraduate Institution Attended
(12) Highest Degree Offered by Undergraduate Institution
(13) Area of Undergraduate Institution
(14) Percent of White Students at Undergraduate Institution
(15) Ranking of Academic Level of Undergraduate Institution
(16) Credit Beyond Highest Degree
(17) Years of Teaching Experience
(18) Years of Teaching in Present School
(19) Certification
(20) Assignment to Present School District
(21) Attend Summer Institutes
(22) Attend Summer Institutes for teaching culturally disadvantaged
(23) Annual Teaching Salary
(24) Student Effort
(25) Student Ability
(26) Employment Status
(27) Member National Honorary
(28) Re-enter Teaching
(29) Prefer Other School
(30) Type High School Preferred
(31) Socio-Economic Background of Student Preferred
(32) Preference for Student Ability
(33) School Reputation
(34) Percent White of Teacher's Students
(35) School Problems: External
(36) School Problems: Internal
(37) Member of Teachers' Associations
(38) Reads Educational Journals
(39) Teach Until Retirement
(40) Hours a Day Spent in Class Preparation
(41) Hours a Day Spent in Classroom Teaching
(42) Average Class Size
(43) Hours a Day Spent in Counseling
(44) Ability Grouping
(45) Contextual Vocabulary Score

These variables were intercorrelated using a computer routine that allows for the presence of an unequal number of observations on each variable. There are two occasions when this may happen. The first is when a question is answered twice. In this case, the routine eliminates both responses. One example is when an individual changes his answer and either forgets to erase his first response or erases it inadequately.* The second occasion is when either an item alternative or a non-response group was purposely eliminated. Thus, teachers who did not indicate their sex or age were not assigned a non-response value but instead were deleted from the analyses of the relations between sex and age and the other variables.†

The means, standard deviations and intercorrelations for the teacher questionnaire variables are given in Appendix VII. The school sampling weights were used to reproduce teacher population values. There are approximately 36,000 Elementary and 24,000 Secondary teachers in the sample. When inflated by the sampling weights an estimate is obtained of approximately 830,000 Elementary and 556,000 Secondary teachers.

3.4.2. Percent of Variance Accounted for by the Principal Components

As mentioned earlier, the guiding purpose of our Principal Components analyses and Varimax rotations was to seek meaningful groupings of variables. Initially, certain variables were excluded from the factor analyses because it was felt that they would be more meaningful if kept separate, or that they might obscure what would otherwise be a meaningful solution. Thus, Sex, Racial-Ethnic Differences, Credit Beyond Highest Degree, and Contextual Vocabulary Score were kept out of the factor analyses. In addition, a number of different subsets of variables considered to be meaningful on a priori grounds were subjected to both Principal Components analysis and Varimax rotation.‡ For example, it was thought that such variables as Father's Education, Mother's Education, and Father's Occupation might form an index of socioeconomic background. Preliminary analyses showed, however, that although some of the a priori groupings did form a clear and single rotated component many of them did not.

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* Machine scoring did not allow for more than one response.

† See Appendix VI for the alternatives eliminated by this method.

‡ A rotated component is often referred to for convenience as a factor.

Nevertheless, the full set of 41 variables, with only a few exceptions, did tend to form meaningful rotated components. Thus Percent of White Students at Undergraduate Institution, Percent White of Teacher's Students, and Average Class Size tended to form an unwanted racial differences component.* Similarly, Hours a Day Spent in Classroom Teaching, with Assignment to Present School District, tended to form a component along with Type/Size of Community Spent Most of Life and Annual Teaching Salary. This was an undesired rotated component since it reflected mainly rural-urban differences in school systems. We therefore eliminated all of these variables except the last two from further analyses. The remaining 36 variables were subjected to a Principal Component analysis. The magnitude of the roots (i.e. amount of variance accounted for by each component) and the Cumulative Percent of variance accounted for by each component are given for both Elementary and Secondary groups in Appendix VII.

3.4.3. Interpretation of the Indices

For each group, those components that had a root of one or greater were subjected to a Varimax rotation. These components accounted for 55 and 54 percent of the total variance for Elementary and Secondary teachers, respectively. The rotated components are given in Appendix VII.

Rotated components are interpreted by applying a suitable label to the variables that have a moderate to high weight. Assignment of the label is made on the basis of what the variables appear to have in common. Where a variable has a moderate weight on more than one rotated component it is assigned to the one on which it most meaningfully belongs. Thus, each variable belongs to one and only one component. The reason for this is that if a variable were allowed to belong to more than one rotated component, the correlations of the component scores would be unduly highly correlated as the same variable entered into both components. The analyses showed that the same rotated components could be obtained for both Elementary and Secondary teachers, although the weights differed slightly in some instances. Some of the rotated components were discarded because they involved only one or two variables, or because the variable clearly belonged on another component.

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* Apparently non-white teachers are less likely to have classes of average size than are white teachers.

An interpretation of each rotated component is given below. Variables that are not listed on a component are considered to have a zero weight on it. The weights used and presented in the following tables have been taken directly from the Varimax solution. Hereafter, the interpreted components will be regarded as indices. All weights have been rounded to two places of decimals and the decimal points omitted.

Table 3.4.3.1. - Teacher Index I: Experience

Variable Number	Variable Title	Weights Elementary	Secondary
2	Age	86	85
17	Number of Years Teaching	88	88
18	Number of Years Teaching in This School	79	82
39	Expects to Remain in Teaching Until Retirement	52	39*

Table 3.4.3.2. - Teacher Index II: Teaching Conditions

Variable Number	Variable Title	Weights Elementary	Secondary
24	Student Effort	81	82
25	Student Ability	81	81
28	Re-enter Teaching	18*	15*
29	Prefer Other School	- 39	- 44
33	School Reputation	64	72
35	School Problems: External	- 64	- 55
36	School Problems: Internal	- 69	- 67
44	Ability Grouping Taught	29**	16**

Table 3.4.3.1 shows the weights for an index involving the teacher's experience and commitment. The variable with the highest weight is Number of Years Teaching. Next comes Age, followed by Number of Years Teaching in this School. The last variable, Expects to Remain in Teaching Until Retirement, appears to depend on being older and having more years of teaching experience. The name of the index is Experience.

Table 3.4.3.2 shows the weights for index involving variables that reflect the teacher's view of his teaching relationship with the student body. A teacher who has a high score on this index feels that the students in his school try hard (24), and are of high academic ability (25). He also sees the school as having few problems of any kind (35,36), and as enjoying a good reputation (33) with other teachers (i.e., with teachers not employed in the school). Such a teacher reports that he is currently teaching high ability students (44), that he would not prefer to teach in some other school (29), and that he would reenter teaching as a profession if he could start all over again (28). The name of the index is Teaching Conditions.

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* The asterisks in Tables 3.4.3.1 and 3.4.3.2 indicate that each of these variables had a higher weight on a small component that was later discarded.
** The double asterisks in Table 3.4.3.2 indicate that this variable had a higher weight on another index called Teacher Preference, but that we decided it belonged more meaningfully on this index (see p. 66 below).

Table 3.4.3.3.- Teacher Index III: Localism of Background

Variable Number	Variable Title	Weight Elementary	 Secondary
3	Area Spent Most of Life	89	89
6	Area Graduated High School	91	91
13	Area of Undergraduate Institution	77	78

Table 3.4.3.4. - Teacher Index IV: Socio-Economic Background

Variable Number	Variable Title	Weight Elementary	 Secondary
4	Type/Size of Community Spent Most of Life	27*	11*
7	Father's Occupational Level	73	75
8	Father's Educational Level	84	86
9	Mother's Educational Level	76	75

Table 3.4.3.5. - Teacher Index V: Training

Variable Number	Variable Title	Weight Elementary	 Secondary
10	Highest Degree Held	66	66
19	Certification	54	50
23	Salary	76	72
26	Tenure	54	57

Table 3.4.3.3 shows the weights for an index related to the area in which the teacher spent most of his years prior to completion of college. A teacher with a high score on this index has moved relatively often from one area to another, while one with a low score has not. The name of the index is Localism of Background.

Table 3.4.3.4 shows the weights for an index involving some of the major variables that are considered indicators of socio-economic status. The status in question, however, is not the teacher's current one, but rather that of his parents, which may be quite different. For this reason, the name of the index is Socio-Economic Background, not Socio-Economic Status.

Table 3.4.3.5 shows the weights for an index involving the teacher's own education, both formal and informal. A teacher with a high score on this index has a relatively high salary (23), a more advanced degree (10), certification (19), and tenure (26). Since salary, certification and tenure are partly determined by the level of the degree held and partly by teaching experience, this index encompasses in-service training as well as formal academic preparation. As one would expect, it is somewhat correlated with the index for Experience (see p. 69 below). The name of this index is Training.

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* The asterisk in Table 3.4.3.4 indicates a variable that had a higher weight on the Training index but was considered more interpretable here.

Table 3.4.3.6. - Teacher Index VI: College Attended

Variable Number	Variable Title	Weight Elementary	Weight Secondary
11	Undergraduate Institution Attended	71	50
12	Highest Degree Offered by Teacher's Undergraduate Institution	73	66
15	Teacher's Ranking of Academic Standing of Undergraduate Institution	59	71

Table 3.4.3.7. - Teacher Index VII: Teaching Related Activities

Variable Number	Variable Title	Weight Elementary	Weight Secondary
22	Attends Summer Institutes for Teaching the Culturally Disadvantaged	16*	50
37	Member of Teachers Associations	22*	18*
38	Reads Educational Journals	46	37*
40	Hours a Day Spent in Classroom Preparation	71	60
43	Hours a Day Spent in Counseling (in addition to his official assignment)	59	64

Table 3.4.3.8 - Teacher Index VIII: Preference for Student Ability Level

Variable Number	Variable Title	Weight Elementary	Weight Secondary
30	Type of High School Preferred	65	68
31	Socio-Economic Background of Students Preferred	48	39
32	Preference for High Ability Students	68	66

Table 3.4.3.6 shows the weights for an index involving variables that are all related to various aspects of the teacher's undergraduate institution. Thus Undergraduate Institution Attended (11) is a rank assigned to each type of institution on the basis of the vocabulary score obtained by alumni of it who went into teaching. Usually, the high-ranking schools are the public and private universities; the private junior colleges and teachers' colleges rank lowest. The names of the other two variables in this index are self-explanatory. The name of the index itself is College Attended.

Table 3.4.3.7 shows the weights for an index involving variables that refer to teaching as an activity. Thus the index includes preparation for teaching (40), maintenance of teaching skills (22, 37, 38), and performance of certain teacher-related obligations (43). The name of the index is Teaching Related Activities.

Table 3.4.3.8 shows the weights for an index involving variables denoting certain perceived characteristics of the teacher's students. A teacher with a high score on this index prefers an academic school with a strong emphasis on college preparation (30), and a student body consisting of high-ability children of white collar and professional workers (31, 32). The name of the index is Preference for Student Ability Level.

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* The asterisks in Table 3.4.3.7 denote variables that had a higher weight on other small components, which were discarded.

Three components remained from the Elementary and two from the Secondary groups. These were discarded. The reason, in each case, was either that the few variables with high weights on them were already used on indices, or that there were only one or two variables on the component and these could more meaningfully be kept as single variables rather than be weighted and given the status of an index. However, of the thirty-six variables that were analyzed only two failed to be included in an index.*

3.4.4. Index Score Intercorrelations for Elementary and Secondary Teachers

Scores for each Elementary and Secondary teacher on each index were computed and then intercorrelated. Each variable was first standardized to a mean of zero and a standard deviation of one.† The standardized variables for each index were then multiplied by their respective Elementary weights, summed, and intercorrelated.‡ These intercorrelations are given in Table 3.4.4.1 (see also Appendix VIII).

Inspection of Table 3.4.4.1 shows that the index intercorrelations are what one might expect on the basis of the variables that comprise them. Thus, one would expect that the older, more experienced teachers (I) would tend to be more local in their background (i.e., would tend to have moved around less), would have lower socio-economic origins (IV), would have more training (V), went to a less highly ranked college (VI), and engaged in more teaching-related activities (VIII) than their younger, less experienced counterparts.

Teaching Conditions (II) is virtually uncorrelated with all the other indexes except Preference for High Ability Students (VIII). This is meaningful in that the teacher who is in a favorable teaching situation also tends to prefer high ability students.

The negative relation of Socio-Economic Background (IV) to Experience (I) is probably due to an historical

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* Attends Summer Institutes (21), and is Member of National Honorary Association (27).

† Using the means and standard deviations from Appendix VII to subtract out and divide by, respectively.

‡ Since the Elementary and Secondary weights resembled each other closely, and since we wanted to keep the indices as comparable as possible, the Elementary weights were used for both categories of teachers.

Table 3.4.4.1. - Index Intercorrelations for Elementary and Secondary Teachers*

		I	II	III	IV	V	VI	VII	VIII
I	Experience	100	02	- 09	-18	54	-03	15	- 08
II	Teaching Conditions	06	100	- 01	07	00	06	01	09
III	Localism	- 15	00	100	08	- 04	05	03	01
IV	Socio-Economic Background	- 30	06	09	100	- 07	14	- 02	16
V	Training	33	03	01	00	100	08	09	02
VI	College Attended	-16	03	09	19	07	100	01	09
VII	Activities	12	- 01	03	- 04	08	-02	100	-05
VIII	Preference	- 08	10	01	15	04	12	- 10	100

* The correlations for ELEMENTARY teachers are given below the main diagonal, running from upper left to lower right with entries of one, and the correlations for SECONDARY teachers are given above the main diagonal. The correlations are based upon approximately 36,000 Elementary and 24,00 Secondary teachers. All coefficients have been rounded to two decimal places and decimal points omitted.

trend. Since Fathers' and Mothers' Educational Levels are used to define Index IV, and since there has been a general increase in the level of education in the adult population in recent years, one would expect the younger teachers' parents to have more education than those of the older teachers. Socio-Economic Background (IV) is also related to rank of College Attended (VI) and to Preference for High Ability Students (VIII).

It will be remembered that our objective was to reduce the number of variables in a meaningful way. This has now been accomplished. At the same time, the index scores have low intercorrelations. However, meaningful interpretations can be obtained when the index scores themselves are correlated.

3.4.5. Correlations of Elementary and Secondary Teacher Indices With Selected Other Variables

Nine of the forty-five original variables were eliminated from the factor analyses either on the basis of the preliminary analysis or for special study and analysis later on. Also, two variables included in the analyses did not have a substantial weight on any of the indices.

The eliminated variables were correlated with the indices. In addition, some special variables used in the indices were selected out for use in special studies. Among these were sex, age, race, salary, and verbal score. The correlations are given in Table 3.4.5.1 (see also Appendix VIII). It will be seen from this table that the variables used to form part of an index are highly correlated with that index.* Thus, it is to be expected that Age (2) would be highly correlated with the Experience (Index I) and Salary (23) with Training (Index V). Sex (1) is related slightly to Experience (Index I) for Elementary teachers, which indicates that slightly more of the older, more experienced Elementary teachers are women. Since Age (2) is used in the Experience index, we can expect it to be correlated with other indices that are also correlated with this index.

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* As a rule of thumb, correlations of .10 or less will not be discussed.

Table 3.4.5.1. - Correlations of Elementary and Secondary Teacher Indices With Selected Other Variables

		Index Number and Title							
Variable Number	Title	Experience I	Teaching Cond. II	Localism III	Socio-Econ. Background IV	Training V	College Attended VI	Activities VII	Preference VIII
1	Sex	14	07	-04	03	-09	-03	00	-02
2	Age	89	06	-09	-27	26	-12	10	02
5	Racial-Ethnic Differences	-02	22	05	16	01	19	-18	16
14	Percent White at Undergraduate Institution	02	19	05	13	01	16	-18	15
16	Credits Beyond Highest Degree	20	-05	06	02	28	08	11	-01
20	Assignment to Present School District	09	05	-03	-07	-03	01	-01	00
21	Attends NSF-NDEA-ESEA Summer Institutes	03	-04	-01	-02	05	00	09	-02
23	Salary	31	02	08	02	79	08	02	03
27	Member National Honorary	03	03	04	05	09	05	08	06
34	Percent White of Teacher's Students	00	38	04	09	-04	10	-12	16
41	Hours/Day Spent in Classroom Teaching	-08	-01	00	08	07	04	-10	02
42	Average Class Size	-12	06	03	09	01	06	-03	07
45	Contextual Vocabulary Score	-07	09	06	20	12	19	-13	16

* The correlations are based upon approximately 36,000 Elementary and 24,000 Secondary teachers.

Table 3.4.5.1. - Continued

Variable Number	Title	Experience I	Teaching Cond. II	Localism III	Socio-Econ. Background IV	Training V	College Attended VI	Activities VII	Preference VIII
		Index Number and Title							
1	Sex	03	05	00	15	-14	01	03	01
2	Age	89	-01	-04	-16	45	-02	13	-07
5	Racial-Ethnic Differences	-03	17	02	12	07	19	-15	12
14	Percent White at Undergraduate Institution	01	16	03	11	08	15	-17	10
16	Credits Beyond Highest Degree	31	-05	02	00	32	08	07	04
20	Assignment to Present School District	00	06	-02	-05	00	02	03	-02
21	Attends NSF-NDEA-ESEA Summer Institutes	09	00	02	-04	18	-01	07	12
23	Salary	48	00	00	-03	81	11	03	00
27	Member National Honorary	04	04	04	06	08	05	09	09
34	Percent White of Teacher's Students	-05	27	04	07	-01	10	-11	11
41	Hours/Day Spent in Classroom Teaching	-08	03	00	05	-03	03	-03	06
42	Average Class Size	-04	03	01	06	00	-01	-03	07
45	Contextual Vocabulary Score	00	07	04	18	10	15	-05	22

* The correlations are based upon approximately 36,000 Elementary and 24,000 Secondary teachers.

The correlations that are of major interest are those between the racial difference variables (5, 14, 34) and the indices. Thus, Racial-Ethnic Differences (5), Percent of White Students at Teacher's Undergraduate Institution (14), and Percent White of Teacher's Students (34) are all correlated with Teaching Conditions (Index II), Socioeconomic Background (Index IV), College Attended (Index VI), Teaching-Related Activities (Index VII), and Preference for High Ability Students (Index VII). What these correlations indicate is that white teachers tend to teach in predominantly white schools. They think that these schools provide more favorable teaching conditions (see Index II). They also have a higher Socioeconomic Background (Index IV) than their non-white counterparts, and tend to get their training at higher-ranked undergraduate institutions (Index VI). Finally, they are less involved in Teaching Related Activities (Index VII) than their non-white counterparts, and prefer to teach higher ability students -- who, in turn, happen to be predominantly white.*

Other meaningful correlations are between Credit Beyond Highest Degree (16), Experience (Index I), and Teaching Related Activities (Index VII). Average Class Size (42) is negatively related to Experience (Index I), which indicates that the older, more experienced teachers tend to have both larger and smaller classes than do the younger teachers. The correlations of Contextual Vocabulary Score (45) with Socioeconomic Background (Index IV), Training (Index V), College Attended (Index VI), Activities (Index VII) and Preference for Student Ability Level (Index VIII) indicated that the higher-scoring teachers tend to have a higher Socioeconomic Background and more Training. They also went to a higher-ranking college, are less heavily involved in Teaching Related Activities, and have a greater Preference for High Ability students.

Regression analyses using those correlations are presented in a later chapter, together with special summary analyses of school personnel and personnel expenditure variables.†

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* See the student index intercorrelations earlier in this chapter.

† Pp. 249-288 below.

SUMMARY

This section presented the results of analyses concerned with reducing the number of items from the Teacher Questionnaire. Factor analytic techniques (Principal Components analyses and Varimax rotations) were used to determine how to group sets of correlated variables into indices. The indices were found to be highly similar for both Elementary and Secondary teachers. Consequently, the weights for Elementary teachers were used to obtain index scores.

The indices and their interpretive titles are:

I	Experience
II	Teaching Conditions
III	Localism of Background
IV	Socioeconomic Background
V	Training
VI	College Attended
VII	Teaching Related Activities
VIII	Preference for Student Ability Level

Index scores were computed and intercorrelated for Elementary and Secondary teachers. These correlations were low in magnitude and could be meaningfully interpreted. Correlations of other variables with the indices showed that Racial-Ethnic Differences, Percent of White Students at Teacher's Undergraduate Institution, and Percent White of Teacher's Students were correlated with Teaching Conditions (Index II), Socioeconomic Background (Index IV), College Attended (Index VI), Teaching Related Activities (Index VII) and Preference for High Ability Students (Index VIII).

3.5. Development of the Principal and School Indices

Principals were grouped into Elementary, Secondary, and Total, and analyses were conducted for each group. The elementary and secondary principals were selected on the basis of their response to a question concerned with the highest grade included in their school.* Thus those principals who said their school included the ninth grade or higher are included in the group labeled Secondary, while those who said their school included the eighth grade or less are included in the group labeled Elementary. The group of schools labeled Total consists of all the principals included in the sample. Analyses of the Total group were conducted in order to compare their similarities and differences with the Elementary and Secondary groups. Since we wanted, insofar as possible, to maintain the same conceptual framework when working with all the schools, we decided to use the groupings obtained from the Total schools group if sufficient similarities were obtained between them and the other two groups.

Two forms of the principal questionnaire were used in the survey. The first contained 100 questions. The second was a summary questionnaire that was sent to all principals who failed to respond to the original questionnaire. This latter form contained approximately 92 questions some of which were different in format from the original questionnaire. In the present analysis, we used only those questions that were common to the two forms and were presented in the same format. There were approximately 84 items from these two forms that were judged to be of interest to the investigators. These items do not always correspond to single questions; for example, one question might have had several items. Thus question 13 had 18 sub-items concerned with the different kinds of school facilities the school had. All of these items were used as variables in the analyses (see p. 78 below). Many of them, however, were judged to be best kept as single items for special studies rather than being grouped with other variables. Thus items concerned with integration and racial-ethnic group membership were left as separate items.

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* See Appendix IX.

The variables used in the analyses are listed below. The manner in which they were coded, together with the detailed numerical codes and the value assigned for a non-response, are given in Appendix IX, together with the codes for Elementary and Secondary schools. The means, standard deviations and intercorrelations for Elementary, Secondary, and Total schools with these codes are given in Appendix X.

PRINCIPAL QUESTIONNAIRE: SET OF 22 VARIABLES

(1) Acreage of Plant Site
(2) Age of Building
(3) Pupils Per Room
(4) Centralized Library
(5) Auditorium
(6) Gymnasium
(7) Cafeteria
(8) Athletic Field
(9) Hot Meal Kitchen
(10) Infirmary or Health Room
(11) Years as a Principal
(12) Years as a Principal in this School
(13) Age
(14) Sex
(15) Highest Degree Held
(16) Undergraduate Institution Attended
(17) Highest Degree Offered by Undergraduate Institution
(18) Area of Undergraduate Institution
(19) Credit Beyond Highest Degree
(20) Principal's Estimate of School's Reputation
(21) Percent of Time Teaching
(22) Principal's Salary

PRINCIPAL QUESTIONNAIRE: SET OF 62 VARIABLES

(1) Free Kindergarten (Elementary)
(1) College Representatives (Secondary)
(2) Free Nursery (Elementary)
(2) Principal's Salary (Secondary)
(3) State Accreditation
(4) Regional Accreditation

(5) Compulsory Attendance Law
(6) Rural-Urban Location
(7) Principal's Estimate of Student's Socio-Economic Status
(8) Public Library
(9) PTA Attendance
(10) Length of School Day
(11) Courses from Different Teachers
(12) Volumes in Library
(13) Grouping
(14) Percent Highest Track
(15) Percent Lowest Track
(16) Shop Tools
(17) Biology Lab
(18) Chemistry Lab
(19) Physics Lab
(20) Language Lab
(21) Typing Room
(22) Percent to Higher Track
(23) Movie Projectors
(24) Percent to Lower Track
(25) Percent Free Lunch
(26) Percent Free Milk
(27) Texts Provided
(28) Age of Texts
(29) Biology Text (Secondary)
(30) Availability of Texts
(31) Percent of Students in Part-Time Attendance
(32) Intelligence Testing
(33) Achievement Testing
(34) Interest Testing
(35) Accelerated Curriculum
(36) Pupils Per Teacher
(37) Teacher Turnover
(38) Teacher Tenure
(39) Teacher Exams
(40) Art Teacher
(41) Music Teacher
(42) Speech Teacher
(43) Mental Health
(44) Reading Teachers
(45) Guidance Counselors
(46) Librarian
(47) Nurse

(48) Attendance Officer
(49) Pupil Assignment
(50) Enrollment
(51) Daily Attendance
(52) Percent White
(53) Student Transfers In
(54) Student Transfers Out
(55) Principal's Estimate of School Problems
(56) Non-Whites Entered
(57) Promotion Policy
(58) Extra-Curricular Activities
(59) Homework
(60) Remedial Math
(61) Remedial Reading
(62) Special Classes

3.5.2. Percent of Variance Accounted for by Principal Components, with Interpretation of Indices Obtained

The set of 22 variables and the set of 62 variables were both subjected to Principal Components analysis and Varimax rotations. These analyses did not yield any meaningful groups or factors. Usually the factors (i.e., the rotated components) contained both variables that meaningfully belonged together and variables that did not lend themselves to any clear interpretation. For example, a school size and facilities factor emerged, but it also included a large number of unwanted policy variables such as tracking and use of teacher examinations. Although these analyses did not form clear factors their results were useful in forming meaningful subsets of variables. Each subset so formed was subjected to a Principal Components analysis; the weights from the first Principal Component were used to weight the variables in order to form indices. The results of these analyses are given below.

For each subset of variables the weights from the first Principal Component and the percent of variance accounted for by that component are given for the Elementary, Secondary and Total groups of schools. The percent of variance is computed by means of the same theorem as before (see p. 27). A variable is allowed to belong to one and only one component.* This latter rule prevents the component scores from being unduly highly correlated.

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* For the remainder of this report the interpreted components will be referred to as indices.

Table 3.5.2.1. - School Index I: Plant and Facilities

Variable Number*	Variable Title	Weights Total	Weights Elementary	Weights Secondary
1	Area of Plant	65	64	49
4	Central Library	56	49	50
5	Auditorium	70	75	48
6	Gymnasium	58	51	52
7	Cafeteria	69	73	66
8	Athletic Field	43	40	50
9	Kitchen	62	60	56
10	Infirmary or Health Room	46	52	33
Percent of Variance Accounted for by First Principal Component		35.20	35.13	26.17

Table 3.5.2.2. - School Index II: Principal's Experience

Variable Number*	Variable Title	Weights Total	Weights Elementary	Weights Secondary
11	Number of Years as a Principal	90	90	91
12	Number of Years as a Principal in this School	84	84	83
13	Years of Age	80	79	83
Percent of Variance Accounted for by First Principal Component**		---	---	---

Table 3.5.2.1 shows the weights for an index involving the school's physical attributes. A school with a high score on this index tends to have a large plant, a central library, an auditorium, a gymnasium, a cafeteria, an athletic field, a kitchen, and an infirmary or health room. Such a school, in other words, tends to have many of the features usually associated with large schools. The weights are similar for all three analyses, although the percent of variance accounted for by the first principal component for the Secondary analysis is somewhat less than for the Elementary and Total analyses. The name of the index is Plant and Facilities.

Table 3.5.2.2 shows the weights for an index similar to the teacher index for Experience (see Table 3.4.3.1). A principal with a high score on this index is older, has been a principal for many years, and has been at his present school for quite a few years. It will be noted that the weights are much the same for all three analyses. The name of the index is Principal's Experience.

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* Variable numbers in Tables 3.5.2.1 and 3.5.2.2 refer to those in the 22 variable set (p. 76).

† These weights in Table 3.5.2.2 are taken from a Varimax rotation performed upon three components extracted from variables 11, 12, 13, 15, 16, 17, 18, and 22.

Table 3.5.2.3. - School Index III: Principal's Training

Variable Number*	Variable Title		Weights	
		Total	Elementary	Secondary
15	Highest Degree Held	87	87	84
22	Salary	86	86	81
	Percent of Variance Accounted for by First Principal Component			

Table 3.5.2.4. - School Index IV: College Attended

Variable Number*	Variable Title		Weights	
		Total	Elementary	Secondary
16	Ranking of Undergraduate Institution	80	78	59
17	Highest Degree Offered by Undergraduate Institution	82	81	73
18	Location of Undergraduate Institution	20	25	54
	Percent of Variance Accounted for by First Principal Component			

Table 3.5.2.5. - School Index V: Instructional Facilities

Variable Number*	Variable Title		Weights	
		Total	Elementary	Secondary
12	Number of volumes in the Library	59	26	55
16	Shop	84	44	52
17	Biology Labs	87	78	71
18	Chemistry Labs	87	79	71
19	Physics Labs	86	78	73
20	Foreign Language Labs	64	39	47
21	Typing Rooms	84	41	60
23	Movie Projector	57	30	47
58	Extra-Curricular Activities	86	51	75
	Percent of Variance Accounted for by First Principal Component	61.26	30.76	38.81

Table 3.5.2.3 shows the weights for an index that includes two of the variables already included in the teacher index called Training (see Table 3.4.3.5). A principal with a high score on this index has an advanced degree and a high salary. The index may be regarded as a surrogate for the school's total expenditures, since a school that can afford a highly-trained, well-paid principal can also afford to spend large amounts on other things (see section 4.3, below, especially 4.3.4). The weights here are very similar for all three analyses. The name of the index is Principal's Training.

Table 3.5.2.4 shows the weights for an index that resembles the teacher index called College Attended (see Table 3.4.3.6). A principle with a high score on this index attended a highly-ranked undergraduate institution that offered an advanced degree and was located in another area or state. The weights tend to be similar for all three analyses, although the Secondary weights differ somewhat from the others. The name of the index is College Attended.

Table 3.5.2.5 shows the weights for an index that covers a wide variety of school facilities. A school with a high score on this index has many volumes in its library, a shop, laboratories for biology, chemistry, physics and foreign languages, a typing room, and movie projectors. It also offers a number of extracurricular activities. Many of these attributes are commonly found in schools that are large, affluent, or both. It will be noted that the principal component for Total schools accounts for a much higher percent of the variance than for Elementary or Secondary schools. Evidently the differences between Elementary and Secondary schools make a contribution to the Total analysis. These differences, to the extent that they are reflected as differences in the principal component weights, appear to be in variables 12, 16, 20, 21, 23, and 58. And indeed we would expect to encounter differences between Elementary and Secondary schools on many of these variables. It will also be noted that although the absolute values of weights for the three groups are different, their relative values tend to be similar. Thus variables that have high weights for the Total group often have high weights for the others, too. The name of the index is Instructional Facilities.

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* The variable numbers in Tables 3.5.2.3 and 3.5.2.4 refer to those in the 22 variable set.

† These weights are taken from a Varimax rotation performed upon three components extracted from variables 11,12,13,15,16,17,18 and 22.

‡ The variable numbers in Table 3.5.2.5 refer to those in the 62 variable set.

Table 3.5.2.6. - School Index VI: Specialized Staff and Services

Variable Number*	Variable Title	Total	Weights Elementary	Secondary
1	Free Kindergarten	45	61	None
40	Art Teacher	75	61	80
41	Music Teacher	62	55	57
42	Speech Teacher	51	68	60
43	Mental Health Provisions	57	62	69
44	Remedial Reading Teacher	43	32	47
45	Number of Guidance Counselors	66	32	81
46	Librarian	66	53	65
47	Nurse	67	69	73
48	Attendance Officer	21	17	36
62	Special Classes	65	63	77
Percent of Variance Accounted for by First Principal Component		61.26	38.81	30.76

Table 3.5.2.7. - School Index VII: Tracking and Ability Grouping

Variable Number*	Variable Title	Total	Weights Elementary	Secondary
13	Ability Grouping or Tracking	82	81	81
14	Proportion of Students in Highest Track	82	84	75
15	Proportion of Students in Lowest Track	81	83	69
22	Proportion of Students Moved to Higher Track	63	64	64
24	Proportion of Students Moved to Lower Track	69	69	67
35	Accelerated Curriculum	33	28	38
Percent of Variance Accounted for by First Principal Component		49.52	50.45	44.88

Table 3.5.2.8. - School Index VIII: Frequency of Testing

Variable Number*	Variable Title	Total	Weights Elementary	Secondary
32	Frequency of Intelligence Testing	78	70	84
33	Frequency of Achievement Testing	76	68	83
34	Frequency of Interest Testing	47	58	57
Percent of Variance Accounted for by First Principal Component		46.83	43.04	57.11

Table 3.5.2.6 shows the weights for an index involving a school's specialized services. A school with a high score on this index has many of the special services a large budget would support. Their nature is evident from the list of variable titles. Special Classes included separate instruction for the mentally retarded, those with speech impairments, etc. As one would expect, services of this kind are most often found in large schools. The percent of variance accounted for by the first principal component is much greater for the Total group than for either of the others. The differences between the Elementary and Secondary groups; to the extent that they are reflected as differences in the principal component weights, appear to be due mainly to the Number of Guidance Counselors, and the availability of an Attendance Officer. As before, the relative weights for the three groups are more similar than the absolute values. Thus variables that have high weights for the Total group tend also to have high weights for the other two groups. The name of the index is Specialized Staff and Services.

Table 3.5.2.7 shows the weights for an index involving the school's use of tracking. A school with a high score on this index practices ability grouping and tracking extensively. It is also a school in which there is an accelerated curriculum, and in which a large amount of movement occurs between tracks. The percent of variance accounted for by the first principal component is slightly greater for the Total and Elementary than for the Secondary groups. However, the weights for all three groups are highly similar. The name of the index is Tracking and Ability Grouping.

Table 3.5.2.8 shows the weights for an index involving the school's use of testing. A school with a high score on this index administers intelligence, achievement and interest tests quite frequently. The percent of variance accounted for by the first principal component is somewhat greater for the Secondary than for the other two groups. This indicates that a Secondary school that practices one kind of testing is more likely to practice other kinds as well. As before, the relative order of the weights is much the same for all three groups.

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* The variable numbers in Tables 3.5.2.6, 3.5.2.7, and 3.5.2.8 refer to those in the 62 variable set.

Table 3.5.2.9. - School Index IX: Pupil Transfers

Variable Number*	Variable Title	Weight Total	Elementary	Secondary
53	Percent of Pupil Transfers In	90	90	87
54	Percent of Pupil Transfers Out	90	90	87
Percent of Variance Accounted for by First Principal Component		81.32	81.97	76.41

Table 3.5.2.10. - School Index X: Remedial Programs

Variable Number	Variable Title	Weight Total	Elementary	Secondary
60	Percent of Students in Remedial Math	91	92	90
61	Percent of Students in Remedial Reading	91	92	90
Percent of Variance Accounted for by First Principal Component		83.43	83.70	81.83

Table 3.5.2.11. - School Index XI: Free Milk and Lunch Programs

Variable Number*	Variable Title	Weight Total	Elementary	Secondary
25	Percent of Students Who Get Free Lunch	87	86	89
26	Percent of Students Who Get Free Milk	87	86	89
Percent of Variance Accounted for by First Principal Component		75.75	74.59	79.94

Table 3.5.2.9 shows the weights for an index involving the amount of Turnover among a school's student body. A school with a high score on this index experiences much student turnover, both influx and outflow. The slightly lower weights and lower percent of variance accounted for by the first principal component indicate that the trend is slightly less pronounced for the Secondary group. The name of the index is Pupil Transfers.

Table 3.5 2.10 shows the weights for an index involving the extent of a school's remedial programs. A school with a high score on this index has a large proportion of its students in such programs. The weights and percent of variance accounted for by the first principal component are very similar for each group. The name of the variable is Remedial Programs.

Table 3.5.2.11 shows the weights for an index involving the school's free milk and lunch programs. A school with a high score on this index has a large proportion of its students enrolled in such programs. The weights and percentages of variance accounted for by the first principal component are similar for the different groups. The name of the index is Free Milk and Lunch Programs.

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* The variable numbers in Tables 3.5.2.9, 3.5.2.10, and 3.5.2.11 refer to those in the 62 variable set.

Table 3.5.2.12. - School Index XII: Accreditation

Variable Number*	Variable Title	Total	Weights Elementary	Secondary
3	State Accreditation	86	88	79
4	Regional Accreditation	86	88	79
Percent of Variance Accounted for by First Principal Component		73.15	77.76	62.09

Table 3.5.2.13. - School Index XIII: Age of Texts

Variable Number	Variable Title	Total	Weights Elementary	Secondary
28	Age of Texts	77	77	77
29	Date of Reading Books (Elementary) or Date of Biology Text (Secondary)	77	77	77
Percent of Variance Accounted for by First Principal Component		58.77	58.77	58.77

Table 3.5.2.14. - School Index XIV: Availability of Texts

Variable Number*	Variable Title	Total	Weights Elementary	Secondary
27	Texts Provided	74	73	73
30	Sufficient Texts Available	74	73	73
Percent of Variance Accounted for by First Principal Component		54.76	52.81	52.81

Table 3.5.2.12 shows the weights for an index involving a school's educational standing. A school with a high score on this index had both regional and state accreditation. The differences in the weights and the percent of variance accounted for by the first principal component indicate that Elementary schools are more likely to have either both or neither kinds of accreditation. This is only one illustration of the fact that the magnitude of the percent of variance accounted for by the first principal component is directly related to the degree of intercorrelation that exists among a set of variables. When this percentage is high, the variables tend to be highly intercorrelated; when it is low, the degree of correlation also tends to be low. A high correlation would exist between the two types of accreditation when a school that has one type of accreditation tends also to have the other kind, and vice-versa. The name of the index is Accreditation.

Table 3.5.2.13 shows the weights for an index involving a school's textbooks. A school with a high score on this index tended to have older textbooks. All sets of weights are the same, as are the sets of variance percentages. The name of the index is Age of Texts.

Table 3.5.2.14 shows the weights for an index involving the distribution of texts. A school with a high score on this index has each student buy his own texts, and suffers from no shortage of them. A school with a low score is more likely to provide texts free, and to have a shortage of them. The weights and percent of variance accounted for are highly similar for each group. The name of the index is Availability of Texts.

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* The variable numbers in Tables 3.5.2.12, 3.5.2.13, and 3.5.2.14 refer to those in the 62 variable set.

SUMMARY

This chapter presented the results of analyses concerned with reducing the more than 400 questionnaire variables into indices. The purpose of this was to avoid making later analysis too complex. Factor analytic techniques (Principal Components analyses and Varimax rotations) were used to group sets of correlated variables into indices. Items from the student, teacher and principal questionnaires were each subjected to these analyses. The indices were found to be highly similar for the Elementary, Secondary and Total school groups, and consequently the weights for Total schools were used to obtain index scores.

The following meaningful indices were obtained:

STUDENTS

Expectations for Excellence*
Socio-Economic Status†
Social Confidence‡
Attitude Towards Life*
Family Structure and Stability†
Educational Desires and Plans*
Study Habits*
Classroom Behavior§

TEACHERS

Experience
Teaching Conditions
Training
College Attended
Localism of Background
Socio-Economic Background
Teaching Related Activities
Preference for Student Ability Level

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* Grades 3, 6, 9 and 12 only.
† All grade levels.
‡ Grades 9 and 12 only.
§ Grade 1 only.

PRINCIPALS AND SCHOOLS

Physical Plant and Facilities
Principal's Experience
Principal's Training
Principal's College Attended
Instructional Facilities
Specialized Staff and Services
Tracking and Ability Grouping
Frequency of Testing
Pupil Transfers
Remedial Programs
Free Milk and Lunch Programs
Accreditation
Age of Texts
Availability of Texts

4. ZERO ORDER CORRELATIONS OF SELECTED VARIABLES

Zero order correlations are correlations that are not equated for associations with other variables. This chapter presents and discusses zero order correlations of variables that are deemed to be of special interest either because they are used extensively in later analyses or because they are of general interest. Our discussion here is intended as a reference source, that is, we attempt to summarize the relationships but not to make causal inferences about what school variables influence different outcomes. However, we also attempt to show what emphasis should be given to the magnitude of each set of correlations. For causal inferences the reader is directed to the chapters that follow.

Section 4.1 contains an enumeration of all the indices and variables used in this report.* For all of these variables the unit of analysis is the school. Variables that involve information from the Principal questionnaires are presented first in the list and tables. Next come the variables that involve information from the Teacher questionnaires, followed by those that involve information from the Student questionnaires. Since, as we have said, the school is the unit of analysis in this chapter and those that follow, the Teacher variables are represented by the mean or average of the teachers' responses for each school. Similarly, each Student variable is the mean or average of the students' responses for the appropriate grade level in each school. For example, Student Body's Socio-Economic Status (SES) may be the average SES score for the students in, say, the sixth grade of a particular school.

The students were surveyed about three weeks after the beginning of the fall semester. This meant that if they happened to be in a new school the staff and resources of that school could not have had much of an opportunity to influence their achievement and attitudes. Similarly, if they were in the same school the teachers in their new grade level could not yet have had much of an opportunity to influence them. In order to aggregate or average for each grade level those teachers who might have had an influence on the students, the following steps were taken. For grades 1, 3 and 6 only, teachers who taught grades of kindergarten through sixth grade were aggregated;* for grade 9, kindergarten through eighth grade teachers were aggregated; for grade 12, only teachers who taught grades nine through twelve were aggregated. In the case of the principals, schools with grades 9 through 12 were included in the twelfth-grade analyses, while schools with grades 1 through 8 were included in the ninth-grade analyses. For grades 1, 3 and 6, if the school had student information for that particular grade level, then the principal (and school) information was also brought into the analysis.

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* Many of the variables that did not enter into any index, were retained for further use, and are included in the analyses given in this chapter, as well as in some of the following chapters.

4.1. List of Indices and Variables

The following is a list of the indices and variables used in the analyses that follow. Detailed information can be found in Chapter 3 and in the appropriate appendices.

Plant and Physical Facilities
Age of Building
Pupils Per Room
Instructional Facilities
Specialized Staff and Services
Tracking
Testing
Pupil Transfers
Remedial Programs
Free Milk and Lunch Programs
Accreditation
Age of Texts
Availability of Texts
Compulsory Attendance Law

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* On the assumption that specialized teachers -- i.e., those in such subjects as music, art, and remedial reading -- teach at several grade levels within this range.

Rural-Urban Location
Principal's Estimate of Students' Socio-Economic Status
PTA Attendance
Pupil Teacher Ratio
Teacher Turnover
Teacher Tenure
Teacher Exams
Pupil Assignment
Enrollment (Size)
Daily Attendance
Principal's Estimate of the Percent of White Students in the School
Principal's Estimate of School Problems
Non-Whites Entered
Principal's Estimate of the School's Reputation
Promotion Policy
Homework
Free Nursery
Length of School Day
Courses from Different Teachers
Percent of Students in Part-Time Attendance
Percent of Graduates Going On to College (12th grade schools only)
Percent of Non-White Graduates Going On to College (12th grade schools only)
Percent of Graduates Going On to Vocational Training (12th grade schools only)
Percent of Non-White Graduates Going On to Vocational Training (12th grade schools only)
Percent of Boy Dropouts (12th grade schools only)
Principal's Experience
Principal's Training
Principal's College Attended
Principal's Sex
Principal's Credits Beyond Highest Degree
Teacher's Experience
Teacher's Training
Teacher's Socio-Economic Background
Teacher's Localism
Teacher's College Attended
Teaching Conditions

Teaching Related Activities
Preference for Student Ability Level
Teacher's Sex
Teacher's Racial-Ethnic Group Membership
Percent of White Students at Teacher's Undergraduate Institution
Teacher's Credits Beyond Highest Degree
Teacher's Assignment to Present School District
Attendance at Summer Institutes
Annual Teaching Salary
National Honorary Society
Percent White of Teacher's Students
Number of Hours/Day Spent in Classroom Teaching
Contextual Vocabulary Score
Expectations for Excellence*
Socio-Economic Status
Attitude Toward Life*
Family Structure and Stability
Educational Plans and Desires*
Study Habits*
Achievement
Sex
Racial-Ethnic Group Membership
Parents Speak a Foreign Language in the Home
Student Speaks a Foreign Language Outside of School
Frequency of Parents' PTA Attendance†
Kindergarten Attendance ‡
Nursery School Attendance‡

4.2. Percent of Total Variance Associated With Schools Students Attend

For the purposes of this survey, differences among students are of two kinds: differences between schools and differences within schools. For example, some schools have more students who come from higher socio-economic strata. However, within any one of these schools students may differ in socio-economic background. These two kinds of differences add or sum to the total differences that exist among students in, say, socio-economic background or achievement level, as the following equation* illustrates:

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* Grades 12, 9, 6 and 3 only.
† Grades 12 and 9 only.
‡ Grades 6, 3 and 1 only.

Total Differences Among Students in Attribute X = Total Differences Among Schools in Attribute X + Total Differences Among Students Within Schools in Attribute X

If this equation is divided by the Total Differences Among Students it expresses the Total Differences Among Schools and the Total Differences Among Students Within Schools as percentages.

Table 4.2 gives the percent of the total variance of selected variables of interest that is associated with the schools students attend, or, in other words, the ratio of the among school variance to the total variance, corrected for the appropriate degrees of freedom.† The percentage figures in Table 4.2 represent upper limits

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* For the sake of simplicity, considerations of statistical error, though relevant here, have been postponed.

† The correction for the appropriate degrees of freedom is a modification of the shrinkage formula for a multiple correlation (for which see Thorndike, 1949, p. 204). To use this formula each school is regarded as a dummy variable where a student is assigned a 1 if he attends that school and 0 otherwise. This results in one dummy variable for each school, and the dependent variable is regressed against the dummy variables. The formula used is:

$$\hat{P}^2 = 1 - \frac{(N-1)\ (1-R^2)}{N-p}$$

where

$\hat{P}^2$ = the corrected squared multiple correlation

N = the number of students

n = the number of schools

$p = n - 1$

R^2 = the ratio of the among school variance (S_A^2) to the total variance (S^2T)

$S_A^2/S^2T = R^2$

Table 4.2. - Percent of Total Variance For Different Student Variables That is Associated With The Schools Students Attend

Variable Title	Grade Level Twelve	Nine	Six	Three	One
Socio-Economic Status	27.67	33.09	28.05	39.98	39.34
Family Structure and Stability	12.20	18.06	18.05	24.10	16.44
Racial-Ethnic Group Membership	68.97	68.58	55.54	59.62	68.71
Achievement	34.04	36.68	35.48	35.63	34.55
Attitude Toward Life	15.89	21.77	13.26	9.10	
Expectations for Excellence	6.10	11.00	9.90	15.13	
Educational Plans and Desires	10.12	11.26	12.38	9.92	
Study Habits	11.31	18.40	15.04	19.41	
Number of Schools	780	923	2372	2453	1302
Number of Students	96,409	133,136	123,386	129,774	71,460

for the percent of variance that can be explained by studying the correlates of school differences. Thus, no more than 37 percent of the total achievement variance at the ninth grade can be explained by correlating school variables (i.e. student and teacher averages, as well as principal items) with the average achievement levels of the schools (for a preliminary report on this, see Beaton, 1968). It is difficult to infer that differences in these percentages at the different grade levels reflect the influence or lack of influence of the schools. The reason, as we shall see in Chapter 5, is that the correlations of school variables with achievement and other outcome measures change in systematic ways at the different grade levels. This is true even though the percent of total variance associated with the schools remains the same from one grade level to the next.

The percentages in Table 4.2 may also be regarded as indications of the extent to which students who are similar with respect to the variable or attribute under consideration tend to go to school with one another. Thus if there were no association of the attributes of the students with the kinds of schools they attend, then the percentage of total variance associated with the schools would be near zero for that attribute. It will be noted that, as one progresses from the lower to the higher grade levels, there is a slight decrease in the percent of total Socio-Economic Status (SES) variance associated with the schools students attend. This decrease may reflect, in part, the aggregation of students with more heterogeneous backgrounds into larger schools at the twelfth-grade level, as well as the loss of the lower SES students as dropouts. A similar trend is observed for Family Structure and Stability, although the percentages here are much lower than for SES.

The percent of total variance in Racial-Ethnic differences that is associated with the schools is very large -- almost 69 percent for grades one, nine and twelve, 60 and 56 percent respectively for grades three and six. These large percentages indicate that white students tend to go to school with white students and non-whites to go to school with non-white students. The extent of segregation in the public schools in the fall of 1965, as reflected by these percentages, was large both in an absolute and a relative* sense. Perhaps the lower percentages at grades three and six represent some attempts at integration.

Another variable of major interest is Achievement.† Inspection of the row containing the Achievement values in Table 4.2 shows that the percent of total Achievement variance that is associated with differences among the schools remains almost constant over the different grade levels. The slight drop at grade twelve may reflect the loss of the lower achieving dropouts. The other variables (or indices) are not represented at the first grade. They tend to show considerable fluctuation in moving from the third- to the sixth- and higher grade levels. These fluctuations represent in part the smaller number and sometimes different nature of the variables used to represent the indices at the lower grade levels.

4.3. Summary of Correlations

Tables 4.3.1 - 4.3.13 present correlations between a number of variables, some of which are aggregates. As Robinson (1950) has noted, correlations between aggregate measures may often be larger than correlations between observations based upon individuals. Also, the criterion-scaling technique employed here tended to increase the degree of correlation among student body questionnaire items (see Appendix XII).

The correlates in question are of:

Rural-Urban Location of School
Size of School
Principal's Training

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* I.e., relative to the other variables under consideration.

† The Equality of Educational Opportunity report (Coleman, et. al., 1966) found that when the racial and ethnic groups were stratified (or kept separate) these values ranged from 5.07 for Oriental-Americans at the twelfth grade to 37.92 for Indian-Americans at the third grade.

Pupil-Teacher Ratio
Student Body's Socio-Economic Status
Student Body's Family Structure and Stability
Student Body's Racial-Ethnic Composition
Student Body's Expectations for Excellence
Student Body's Attitude Toward Life
Student Body's Educational Plans and Desires
Student Body's Study Habits
School Achievement Levels
Special Twelfth Grade Outcome Measures*

In order to keep down the sheer volume of correlations, only those variables that have a correlation of .20 or greater for two or more grade levels are presented and discussed. By and large there are few if any surprises among these correlations; they are consistent with current social scientific opinion on the relation between educational factors.

4.3.1. Correlates of Rural-Urban Location

One of the items from the principal questionnaire dealt with whether the school had a rural or an urban location, and of what kind. The variable was coded so that inner-city and suburban schools received a high value and small-town and rural schools received a low value. The selected correlations are given in Table 4.3.1.

Inspection of Table 4.3.1 shows that the urban schools, when contrasted with the rural schools, have:
better trained and higher paid principals
more specialized staff and services, particularly at the higher grade levels
more frequent use of tracking and ability grouping at the higher grade levels
less frequent use of testing at the higher grade levels

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* Percent of Graduates Going on to College (both total percent and percent non-white), Percent of Graduates Going On to Post-Secondary Vocational Training (both total percent and percent non-white), and Percent of Tenth Grade Boys Who Drop Out Before Completion of Twelfth Grade.

TABLE 4.3.1 CORRELATES OF RURAL-URBAN LOCATION

	1	3	6	9	12
PRINCIPAL'S TRAINING	.47	.47	.46	.44	.43
SPECIALIZED STAFF AND SERVICES	.38	.37	.37	.62	.64
TRACKING AND ABILITY GROUPING	.07	.06	.06	.21	.27
STUDENT TESTING PROGRAM	-.07	-.05	-.07	-.32	-.28
PCT OF STUDENTS TRANSFERRING IN AND OUT	.32	.29	.31	.20	.20
FREE MILK AND LUNCH PROGRAMS	-.20	-.21	-.23	-.16	-.16
PUPIL/TEACHER RATIO	.23	.24	.26	-.01	.12
NUMBER OF HRS. HOMEWORK EXPECTED PER DAY	-.34	-.30	-.31	.02	.18
TEACHER TENURE	.20	.19	.19	.27	.25
TEACHER EXAMINATIONS	.18	.21	.20	.19	.24
NUMBER OF STUDENTS ENROLLED IN SCHOOL	.37	.39	.40	.55	.68
SCOPE AND SEVERITY OF SCHOOL PROBLEMS	.15	.15	.19	.23	.37
NUMBER OF YRS SNCE NON-WHITES ENTERED SCH.	.17	.20	.21	.30	.32
PUPILS/ROOM RATIO	.13	.22	.14	.12	.25
TEACHER'S EXPERIENCE	-.24	-.19	-.19	-.31	.18
TEACHER'S SOCIO-ECONOMIC BACKGROUND	.39	.37	.36	.28	.10
TEACHER'S TRAINING	.40	.43	.44	.26	.41
HRS. PER DAY SPENT IN TEACHING	.27	.24	.26	.20	.17
TEACHER'S ASSIGN. TO PRESENT SCHOOL	-.43	-.34	-.35	-.26	-.36
TEACHER'S SALARY	.42	.43	.44	.35	.39
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.10	.15	.24	.35	.27
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES		.01	.17	.26	.21
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.41	.43	.35	.33	.32

TABLE 4.3.2 CORRELATES OF SCHOOL SIZE

	1	3	6	9	12
PLANT AND PHYSICAL FACILITIES	.31	.33	.30	.22	.15
PRINCIPAL'S TRAINING	.43	.48	.48	.49	.51
INSTRUCTIONAL FACILITIES	.27	.28	.27	.32	.55
SPECIALIZED STAFF AND SERVICES	.50	.50	.51	.69	.75
TRACKING AND ABILITY GROUPING	.08	.13	.14	.28	.39
STUDENT TESTING PROGRAM	.07	.07	.05	-.21	-.21
PCT OF STUDENTS TRANSFERRING IN AND OUT	.24	.27	.26	.16	.21
REMEDIAL MATHEMATICS AND READING CLASSES	.05	.09	.09	.22	.23
RURAL-URBAN LOCATION OF SCHOOL	.37	.39	.40	.55	.68
PUPIL/TEACHER RATIO	.28	.30	.32	.18	.34
TEACHER TENURE	.08	.10	.11	.21	.23
TEACHER EXAMINATIONS	.14	.16	.15	.25	.20
SCOPE AND SEVERITY OF SCHOOL PROBLEMS	.23	.21	.22	.22	.32
NUMBER OF YRS SNCE NON-WHITES ENTERED SCH.	.13	.15	.16	.28	.33
PUPILS/ROOM RATIO	.20	.39	.22	.40	.50
TEACHER'S EXPERIENCE	-.16	-.17	-.17	-.25	.22
TEACHER'S SOCIO-ECONOMIC BACKGROUND	.20	.23	.22	.16	.23
TEACHER'S TRAINING	.26	.27	.29	.18	.49
TEACHER'S SALARY	.24	.26	.29	.31	.43
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.19	.23	.14	.23	.30
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	-.02	-.10	-.14	-.20	-.20

greater student turnover, both influx and outflow
a slightly smaller percentage of their students in free milk and lunch programs
more pupils per teacher at the lower grade levels
a greater number of students and more pupils per room
a tenure system, with use of teacher examinations in the placement process
more problems (destruction of property, stealing, etc.)
longer experience of non-whites' presence in the school
lower expectations of homework at the lower grade levels (one through six)
slightly higher expectations of homework at the twelfth grade.

Teachers in urban schools, compared with teachers in rural schools tend to:
be younger and have slightly less teaching experience at grades one through nine
have slightly more teaching experience at grade twelve
have origins in the higher socio-economic strata, expecially at the lower grade levels
be more highly trained and have higher salary levels
spend more hours in teaching
be more likely to have been placed in the school they are now teaching in than to have chosen it.

Students in urban and suburban schools, when compared with students in small-town and rural schools, tend to come from the higher socio-economic strata and to have a greater desire for more schooling.

4.3.2. Correlates of School Size

Table 4.3.2 gives the correlations with school size (i.e. with the number of students enrolled in the school).

Schools with large numbers of students, when compared with schools with fewer numbers of students, tend to have:
a larger physical plant
a more highly trained and better paid principal
more instructional facilities, including more specialized staff and services
more tracking and ability grouping, but less testing at the higher grade levels

more student turnover, both influx and outflow
a higher percentage of their students in remedial reading and math programs at the higher grade levels
predominantly suburban and urban locations
more pupils per teacher and more pupils per room
a tenure system, with use of teacher examinations in the appointment process
more school problems (destruction of property, stealing, etc.), as estimated by the principal
longer experience of non-whites' presence in the school

Teachers in large schools, when compared with teachers in smaller schools, tend to be:
slightly younger and less experienced at grades one through nine
slightly older and more experienced at grade twelve
tend to have origins in the higher socio-economic strata
have more training and higher salary levels.

Students in large schools, when compared with students in smaller schools, are rather more likely to have parents who speak a foreign language. They are also more likely to have attended kindergarten.

Although the correlations of School Size tend to resemble those of rural-urban location, its moderately high correlations with such expenditure variables as principal's training, teacher's salary, specialized staff and services, and instructional facilities suggest that it may be an important variable for future analyses.

4.3.3. Correlates of Pupil Teacher Ratio

In almost any discussion of school effectiveness the question of an appropriate pupil-teacher ratio arises sooner or later. It is of interest, therefore, to see what other variables are correlated with this ratio. Table 4.3.3 gives such correlations. A high value of the ratio indicates that there are many pupils, a low value that there are fewer pupils per teacher.

Schools with a high ratio, when compared with schools that have a low ratio, tend to have:
fewer instructional facilities
a more urban or suburban location at the lower grade

TABLE 4.3.3 CORRELATES OF PUPIL TEACHER RATIO

	1	3	6	9	12
INSTRUCTIONAL FACILITIES	-.24	-.17	-.17	-.20	.01
RURAL-URBAN LOCATION OF SCHOOL	.23	.24	.26	-.01	.12
NUMBER OF STUDENTS ENROLLED IN SCHOOL	.28	.30	.32	.18	.34
PUPILS/ROOM RATIO	.24	.65	.29	.59	.73
TEACHER'S ASSIGN. TO PRESENT SCHOOL	-.32	-.25	-.25	-.18	-.22
STUDENT BODY'S ATTITUDE TOWARD LIFE		-.07	-.09	-.26	-.24
STUDENT BODY'S ACHIEVEMENT LEVEL	-.14	-.11	-.12	-.34	-.21

TABLE 4.3.4 CORRELATES OF PRINCIPALS' TRAINING

	1	3	6	9	12
PLANT AND PHYSICAL FACILITIES	.25	.25	.24	.13	.10
INSTRUCTIONAL FACILITIES	.15	.17	.18	.23	.50
SPECIALIZED STAFF AND SERVICES	.55	.53	.54	.65	.62
TRACKING AND ABILITY GROUPING	.06	.09	.10	.24	.25
PUPIL ASSIGNMENT	.20	.20	.20	.24	-.14
STUDENT TESTING PROGRAM	.00	.01	.02	-.22	-.32
PCT OF STUDENTS TRANSFERRING IN AND OUT	.28	.29	.27	.23	.12
REMEDIAL MATHEMATICS AND READING CLASSES	.12	.18	.18	.24	.22
RURAL-URBAN LOCATION OF SCHOOL	.47	.47	.46	.44	.43
COMPULSORY ATTENDANCE LAW	.22	.19	.20	.21	.08
TEACHER TENURE	.29	.31	.31	.36	.27
NUMBER OF STUDENTS ENROLLED IN SCHOOL	.44	.48	.48	.49	.51
NUMBER OF YRS SNCE NON-WHITES ENTERED SCH.	.28	.27	.28	.34	.33
PRINCIPAL'S SEX	-.25	-.23	-.20	-.10	-.22
PRINCIPAL'S CREDITS BEYOND HIGHEST DEGREE.	.09	.12	.12	.20	.26
TEACHER'S EXPERIENCE	-.21	-.22	-.22	-.20	.20
TEACHER'S SOCIO-ECONOMIC BACKGROUND	.31	.39	.36	.31	.31
TEACHER'S TRAINING	.54	.58	.58	.42	.55
TEACHER'S COLLEGE ATTENDED	.28	.30	.29	.22	.03
PREFERENCE FOR HIGH ABILITY STUDENTS	.18	.21	.20	.21	.13
TEACHER'S SEX	-.29	-.20	-.17	-.28	.01
HRS. PER DAY SPENT IN TEACHING	.28	.27	.29	.20	.14
TEACHER'S CREDITS BEYOND HIGHEST DEGREE	.15	.13	.19	.40	.30
TEACHER'S ASSIGN. TO PRESENT SCHOOL	-.26	-.19	-.19	-.26	-.26
TEACHER'S SALARY	.60	.63	.62	.58	.58
TEACHER'S VOCABULARY SCORE	.21	.23	.23	.19	.17
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.17	.19	.26	.31	.21
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.39	.46	.37	.35	.24

levels (but less so at grades nine and twelve)
more students enrolled and more pupils per room
teachers who are less likely to have chosen the school they are now in than to have been assigned to it
students who have a less favorable attitude toward life at the higher grades
students who have lower achievement levels at all grades

4.3.4. Correlates of Principal's Training

The index called Principal's Training is a combination of the principal's training and his highest degree held. This index is one measure of the magnitude of a school's budget, since the more affluent schools tend to have higher paid and better trained principals. Table 4.3.4 gives the correlates of Principal's Training.

Inspection of Table 4.3.4 shows that the schools with principals who have better pay and higher degrees are the same schools that tend to have:
a larger physical plant
more instructional facilities, including more specialized staff and services
more tracking, but less testing (at grades nine and twelve)
more student transfers
a greater percentage of students in remedial reading and math courses
a more urban location
more students
a male principal
longer experience of non-whites' presence in the school
a teacher tenure system
a compulsory school law that is enforced
enrollment restricted to students from their particular geographic attendance area, except at grade twelve
principals who have taken course work beyond their highest degree

Teachers in schools that rank high on Principal's Training tend to be:
younger and less experienced, except for grade twelve
of higher socio-economic origins
better trained and better paid
graduates of a college that offered an advanced degree and that, in their opinion, had a high academic standing

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male
high scorers on the vocabulary test
engaged in teaching for more hours per day
holders of credits beyond their highest degree
less likely to have chosen the school they are now in as a place to work.

Students in schools that rank high on Principal's Training tend to come from the higher socio-economic strata and are more likely to have attended kindergarten.

4 3.5. Correlates of Student Body's Socio-Economic Status

The extent to which school attributes are related to Students' Socio-Economic Status may indicate the way in which school resources are allocated, both purposely and unintentionally, along socio-economic lines. Table 4.3.5 presents these correlations. A high scoring school has a high proportion of students whose parents come from the higher educational and occupational strata, who live in a six-to-ten room house that contains a large number of appliances and reading materials, and who have one or two siblings. A low scoring school has many students whose parents come from the lower educational and occupational strata, and who have many siblings.

Comparison of schools that have students of predominantly high socio-economic status with those that have students of predominantly low socio-economic status shows that they tend to have:
principals who are better trained and better paid
more specialized staff and services
a smaller percentage of students in free milk and lunch programs
state and regional accreditation
a more urban location, particularly at the higher grade levels
a good reputation among other educators in the area, as estimated by the principal
a high percent of parental attendance at PTA meetings, at the lower grade levels
a compulsory school law that is enforced
enrollment restricted to students from their particular geographic attendance area, with few or no transfers

TABLE 4.3.5 CORRELATES OF THE STUDENT BODY'S SOCIO-ECONOMIC STATUS

	1	3	6	9	12
PRINCIPAL'S TRAINING	.17	.19	.26	.31	.21
SPECIALIZED STAFF AND SERVICES	.25	.29	.30	.45	.42
PUPIL ASSIGNMENT	.18	.19	.22	.28	.15
FREE MILK AND LUNCH PROGRAMS	-.22	-.22	-.28	-.31	-.14
ACCREDITATION OF SCHOOL	.14	.21	.22	.13	.27
RURAL-URBAN LOCATION OF SCHOOL	.10	.15	.24	.35	.27
PARENT-TEACHER ASSOCIATION	.18	.21	.20	.07	-.03
COMPULSORY ATTENDANCE LAW	.29	.30	.32	.34	.21
DAILY ATTENDANCE	.30	.30	.32	.38	.17
SOCIO-ECONOMIC STATUS	.40	.47	.53	.45	.45
PRINCIPAL'S ESTIMATE OF SCHOOL REPUTATION	.23	.30	.34	.34	.32
TEACHING CONDITIONS	.58	.64	.61	.48	.49
TEACHER'S SOCIO-ECONOMIC BACKGROUND	.30	.35	.41	.40	.32
TEACHER'S TRAINING	.16	.20	.26	.22	.21
TEACHER'S COLLEGE ATTENDED	.27	.25	.28	.32	.28
PREFERENCE FOR HIGH ABILITY STUDENTS	.35	.37	.42	.35	.38
HRS. PER DAY SPENT IN TEACHING	.13	.15	.21	.20	-.12
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.54	.55	.57	.57	.57
PCT WHITE STUDENT AT TEACH'S UNDERGRAD INS.	.51	.52	.54	.47	[illegible]
TEACHER'S SALARY	.23	.27	.33	.31	[illegible]
PCT WHITE STUDENTS IN TEACHER'S CLASS	.57	.62	.61	.54	.57
TEACHER'S VOCABULARY SCORE	.46	.48	.54	.48	.59
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE		.28	.48	.47	-.15
STUDENT BODY'S ATTITUDE TOWARD LIFE		.20	.58	.60	.44
STUDENT BODY'S FAMILY STRUCTURE+STABILITY	.44	.48	.60	.67	.53
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES		.35	.64	.69	.49
STUDENT BODY'S STUDY HABITS		.60	.60	.57	.34
STUDENT BODY'S ACHIEVEMENT LEVEL	.61	.68	.82	.82	.81
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.60	.65	.67	.68	.59
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.37	.42	.56	.62	.50
NURSERY SCHOOL ATTENDANCE	.32	.20	.45		
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.17	.30	.39	.58	.44
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.18	.30	.39	.38	.14

a high percent of students in daily attendance.

The variable entitled "Socio-Economic Status" is actually a description of the occupational background of the pupil's parents (the information was given by the principal). Since this variable might be regarded as an indicator of the student body's socio-economic status it is of interest to note that it is only moderately (.40 to .53) correlated with the index of that name. Hence, if it were used to equate schools for differences in the SES of their students before the relationships of other school variables had been taken into account, the differences would be underestimated, and erroneous inferences could be made concerning the influences of certain school variables.

Table 4.3.5 also shows that teachers in schools with a high SES index value, compared with teachers in schools with a low SES index value, feel that:
they have better working conditions (greater amount of effort put forth by students, fewer disciplinary and racial problems, etc.)
they have higher socio-economic origins, more training and higher salary levels
they went to an undergraduate institution that offered an advanced degree, and thought it had a high academic standing
they preferred to teach high ability students.

They were also more likely to have higher vocabulary test scores, to have attended predominantly white undergraduate institutions, to have mainly white students in their classes, and (except at the twelfth grade) to spend more hours in classroom teaching.

Students in schools with a high SES index value tend to have:
a more stable family structure
higher expectations (except at the twelfth grade)
a greater desire to stay on in school
more studious habits and a more favorable attitude toward life
very much higher achievement levels, particularly at the higher grades

They are also more likely to be white, to have attended kindergarten and nursery school, and to speak English at home and outside of school.

4.3.6. Correlates of Student Body's Family Structure and Stability

The presence or absence of a parent or parental substitute in the home makes all the difference to socialization. This is an important educational fact. A child's degree of socialization -- his readiness for learning, feelings of acceptance or rejection, etc. -- is bound to influence the functioning of his school.

Table 4.3.6 presents correlates of the Family Structure index. A child that scores high on this index has both parents in the home, a mother who works either not at all or only part-time, and has not changed schools recently. A school that scores high on this index has a relatively greater proportion of such children.

When schools that score high on the Family Structure index are compared with lower scoring schools we find that they have fewer school problems, a high percentage of students in daily attendance, and a compulsory school law that is enforced. Teachers in high scoring schools, in contrast to teachers in low scoring schools tend to feel that:

the students try hard to achieve and are of high academic ability
there are few school problems
their undergraduate institution (which offered an advanced degree) had a high academic standing
they prefer to teach high ability students.

They are also slightly less involved in teaching related activities (time spent in preparation for class and counseling, reading educational journals, etc.), are more likely to be white, have higher vocabulary scores, attended predominantly white undergraduate institutions, and have a high percent of white students in their classes.

Students who attend schools that score high on this index tend to:

TABLE 4.3.6 CORRELATES OF THE STUDENT BODY'S FAMILY STRUCTURE AND STABILITY

	1	3	6	9	12
COMPULSORY ATTENDANCE LAW	.25	.20	.25	.25	.08
SCOPE AND SEVERITY OF SCHOOL PROBLEMS	-.22	-.14	-.18	-.15	-.31
DAILY ATTENDANCE	.24	.21	.30	.42	.34
TEACHING CONDITIONS	.40	.35	.42	.39	.43
TEACHER'S COLLEGE ATTENDED	.20	.14	.18	.19	.26
TEACHING RELATED ACTIVITIES	-.16	-.18	-.20	-.19	-.22
PREFERENCE FOR HIGH ABILITY STUDENTS	.27	.21	.26	.21	.22
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.58	.48	.60	.55	.57
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.55	.47	.58	.47	.58
PCT WHITE STUDENTS IN TEACHER'S CLASS	.59	.51	.62	.55	.60
TEACHER'S VOCABULARY SCORE	.41	.35	.43	.35	.39
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE		.47	.67	.66	-.03
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.44	.48	.60	.67	.53
STUDENT BODY'S ATTITUDE TOWARD LIFE		.46	.73	.75	.67
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES		.39	.61	.56	.28
STUDENT BODY'S STUDY HABITS		.60	.72	.82	.56
STUDENT BODY'S ACHIEVEMENT LEVEL	.37	.46	.67	.66	.63
PROPORTION OF FEMALES IN STUDENT BODY	-.20	.44	.38	.63	.54
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.59	.58	.66	.70	.59
STUDENT BODY'S PARENTAL PTA ATTENDANCE				.62	.44
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.21	.23	.44	.47	.16
NURSERY SCHOOL ATTENDANCE	.18	.27	.71		
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.06	.51	.55	.73	.35
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.11	.48	.60	.64	.26

come from higher socio-economic strata
have higher expectations, a greater desire to stay on in school, more studious habits, a more favorable outlook on life, and higher achievement levels
be female (except at the first grade) and white
speak English at home as well as with other students outside of school
have attended kindergarten and nursery school
have parents who attend PTA meetings frequently

4.3.7. Correlates of Student Body's Racial and Ethnic Composition

A school that scores high on Racial-Ethnic Composition has predominantly white and Oriental-American students, whereas a school that scores low has predominantly Negro, Mexican-American, Puerto Rican or Indian-American students. When high-ranking schools are compared with low-ranking schools we note that they tend to:
have a good reputation (as estimated by the principal) among other educators in the area
make less use of teacher examinations in the appointment process
have fewer school problems (destruction of property, stealing, racial tension, etc.)
have a compulsory school law that is enforced
have a high percent of students in daily attendance.

The variable entitled "Proportion of White Students in School" is based on information given by the principal, not on an actual count of the students at different grade levels. It is of interest to note that this variable is highly correlated with Racial and Ethnic Composition. Evidently the racial mix of a school tends to predominate at all grade levels. It also seems that, for research purposes, an estimate of a school's racial mix by the principal may serve as a fairly good surrogate for an actual count of whites and non-whites.

The teachers in predominantly white schools, when compared with their counterparts in non-white schools, tend to:
feel that the students try hard to achieve and are of

TABLE 4.3.7 CORRELATES OF THE STUDENT BODY'S RACIAL AND ETHNIC COMPOSITION

	1	3	6	9	12
COMPULSORY ATTENDANCE LAW....................	.29	.26	.27	.30	.28
TEACHER EXAMINATIONS.......................	-.23	-.23	-.22	-.13	-.17
PROPORTION OF WHITE STUDENTS IN SCHOOL....	.88	.87	.88	.77	.91
SCOPE AND SEVERITY OF SCHOOL PROBLEMS.....	-.24	-.21	-.24	-.22	-.25
DAILY ATTENDANCE.........................	.30	.34	.36	.46	.35
PRINCIPAL'S ESTIMATE OF SCHOOL REPUTATION.	.17	.18	.23	.23	.15
TEACHING CONDITIONS.......................	.50	.53	.54	.46	.37
TEACHER'S SOCIO-ECONOMIC BACKGROUND.......	.24	.22	.22	.24	.32
TEACHER'S COLLEGE ATTENDED................	.29	.23	.23	.28	.35
TEACHING RELATED ACTIVITIES...............	-.28	-.28	-.27	-.35	-.38
PREFERENCE FOR HIGH ABILITY STUDENTS......	.38	.37	.36	.33	.33
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP..	.88	.85	.85	.89	.93
TEACHER'S ASSIGN. TO PRESENT SCHOOL.......	.15	.16	.15	.27	.38
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.85	.82	.82	.77	.93
PCT WHITE STUDENTS IN TEACHER'S CLASS.....	.92	.92	.93	.81	.95
TEACHER'S VOCABULARY SCORE................	.58	.55	.55	.54	.68
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE.		.23	.46	.29	-.38
STUDENT BODY'S SOCIO-ECONOMIC STATUS......	.60	.65	.67	.68	.59
STUDENT BODY'S ATTITUDE TOWARD LIFE.......		.22	.51	.60	.54
STUDENT BODY'S FAMILY STRUCTURE+STABILITY.	.59	.58	.66	.70	.59
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES..		.31	.45	.29	-.05
STUDENT BODY'S STUDY HABITS...............		.53	.47	.43	.11
STUDENT BODY'S ACHIEVEMENT LEVEL..........	.56	.63	.80	.84	.80
PROPORTION OF FEMALES IN STUDENT BODY.....	.03	.14	.09	.27	.22
STUDENT BODY'S KINDERGARTEN ATTENDANCE....	.23	.22	.31	.28	.21
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME..	.10	.31	.48	.39	.16
PARENT SPKS. A FOREIGN LANGUAGE AT HOME...	.10	.30	.43	.29	.09

higher academic ability
have origins in the higher socio-economic strata
have graduated from a college that offered an advanced degree and that they felt had a high academic standing
be less involved in teaching related activities (classroom preparation and counseling, reading educational journals, etc.)
prefer to teach high ability students
be white
have higher vocabulary scores
have attended a predominantly white undergraduate institution
have a high percent of white students in their classes
have chosen the present school they are teaching in rather than to have been assigned to it

The students in predominantly white schools, when compared with the students in predominantly non-white schools, tend to:
come from the upper socio-economic strata
have a more stable family structure
have higher expectations and a greater desire to stay on in school (except at grade twelve)
have more studious habits and a more favorable outlook on life
have very much higher achievement levels, particularly at the higher grades
have a higher proportion of girls
speak English at home and outside school
have attended kindergarten.

4.3.8. Correlates of Student Body's Expectations for Excellence

A student with a high score on the index called Expectations for Excellence believes that his mother, father and teacher want him to be a good student. He also desires to be a good student. A student with a low score does not believe that people have these expectations of him, nor does he hold such expectations for himself. A school with a high score has a greater proportion of high scoring students, while a school with a low score has a greater proportion of low scoring students. The correlations are given in Table 4.3.8.

When schools are compared on this index we find that there is virtually no information from the principal's questionnaire that relates to Expectations at the different grade levels.* The only exception is for the percent of students in daily attendance, which is higher for high scoring schools at grades six and nine.

When teachers in high scoring schools are compared with teachers in low scoring schools we find they tend to:
feel that the students put forth more effort to achieve and are of a higher academic ability
be white
have higher vocabulary scores
have graduated from a predominantly white undergraduate institution
have a high percent of white students in their classes.

All of the above summary statements must be qualified to read "except at grade twelve." This is a subject to which we shall return.

Comparison of students in high and low scoring schools shows that the high scoring students tend to:
come from the higher socio-economic strata
have a more closely knit family structure
have a more favorable outlook on life and higher achievement levels
be female
be white
have attended kindergarten (and nursery school).

Once again, all of these summary statements must be qualified to read "except at grade twelve." On the other hand, for all four grade levels† students in high scoring schools have more studious habits and a greater desire to stay on in school. Evidently at the twelfth grade there is a dramatic change in the Expectations of

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* That is, no information by the standards we have established (correlations for two grade levels must be .20 or greater).

† Measures of this index were not available at the first grade.

TABLE 4.3.8 CORRELATES OF THE STUDENT BODY'S EXPECTATIONS FOR EXCELLENCE

	1	3	6	9	12
DAILY ATTENDANCE		.09	.25	.26	-.06
TEACHING CONDITIONS		.15	.28	.30	-.04
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP		.18	.40	.12	-.37
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.		.19	.39	.12	-.35
PCT WHITE STUDENTS IN TEACHER'S CLASS		.20	.42	.29	-.32
TEACHER'S VOCABULARY SCORE		.16	.29	.09	-.32
STUDENT BODY'S SOCIO-ECONOMIC STATUS		.28	.48	.47	-.15
STUDENT BODY'S ATTITUDE TOWARD LIFE		.51	.77	.72	.09
STUDENT BODY'S FAMILY STRUCTURE+STABILITY		.47	.67	.66	-.03
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES		.51	.72	.69	.45
STUDENT BODY'S STUDY HABITS		.52	.76	.82	.39
STUDENT BODY'S ACHIEVEMENT LEVEL		.25	.50	.31	-.23
PROPORTION OF FEMALES IN STUDENT BODY		.41	.32	.53	.06
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION		.23	.46	.29	-.38
STUDENT BODY'S KINDERGARTEN ATTENDANCE		.22	.45	.32	-.21
NURSERY SCHOOL ATTENDANCE		.39	.73		
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME		.40	.49	.67	.19
PARENT SPKS. A FOREIGN LANGUAGE AT HOME		.37	.53	.66	.25

TABLE 4.3.9 CORRELATES OF THE STUDENT BODY'S ATTITUDE TOWARD LIFE

	1	3	6	9	12
COMPULSORY ATTENDANCE LAW		.06	.22	.25	.13
PUPIL/TEACHER RATIO		-.07	-.09	-.26	-.24
DAILY ATTENDANCE		.09	.24	.38	.34
PUPILS/ROOM RATIO		-.08	-.04	-.26	-.23
TEACHING CONDITIONS		.15	.33	.35	.36
PREFERENCE FOR HIGH ABILITY STUDENTS		.04	.24	.22	.26
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP		.11	.48	.47	.52
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.		.11	.46	.40	.54
PCT WHITE STUDENTS IN TEACHER'S CLASS		.17	.48	.45	.55
TEACHER'S VOCABULARY SCORE		.08	.40	.34	.38
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE		.51	.77	.72	.09
STUDENT BODY'S SOCIO-ECONOMIC STATUS		.20	.58	.60	.44
STUDENT BODY'S FAMILY STRUCTURE+STABILITY		.46	.73	.75	.67
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES		.41	.73	.63	.32
STUDENT BODY'S STUDY HABITS		.41	.86	.79	.58
STUDENT BODY'S ACHIEVEMENT LEVEL		.22	.60	.64	.62
PROPORTION OF FEMALES IN STUDENT BODY		.40	.37	.47	.33
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION		.22	.51	.60	.54
STUDENT BODY'S PARENTAL PTA ATTENDANCE				.52	.33
STUDENT BODY'S KINDERGARTEN ATTENDANCE		.06	.56	.42	.09
NURSERY SCHOOL ATTENDANCE		.25	.80		
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME		.45	.49	.60	.35
PARENT SPKS. A FOREIGN LANGUAGE AT HOME		.42	.58	.53	.26

non-white students.* This has the effect of making all variables that have a substantial relationship with Expectations, particularly race-related variables such as teacher's race, to reverse their relationships.

4.3.9. Correlates of Student Body's Attitude Toward Life

A student with a high score on the index called "Attitude Toward Life" believes that people like himself have a chance to be successful. When he tries to get ahead, he thinks, he won't experience many obstacles; hard work is more important than good luck for success. A school with a high score on this index has proportionately more students who have this favorable outlook on life; a school with a low score has proportionately fewer of them. Correlations of the other variables with this index are given in Table 4.3.9.

When the high scoring schools are compared with the low scoring schools we find that they have fewer pupils per teacher, fewer pupils per room, a compulsory school law that is enforced, and a high percentage of students in daily attendance. The teachers in high scoring schools, when compared with their counterparts in low scoring fields, tend to:

feel that the students put forth more effort and are of a higher academic ability
prefer to teach high ability students
be white
have higher vocabulary scores
have graduated from predominantly white undergraduate institutions
have a large percentage of white students in their classes

Students in schools with high rankings, when compared with students in low ranking schools, tend to:

come from the higher socio-economic strata
have a more favorable family structure
have higher expectations, a greater desire to stay on in school and more studious habits
have higher achievement levels
have higher proportions of girls and white students

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* The loss of non-white dropouts probably has some part in this.

as schoolmates
speak English both at home and outside school
have attended kindergarten and nursery school
have parents who attend PTA meetings frequently.

4.3.10. Correlates of Student Body's Educational Plans and Desires

A school with a high score on the index called Educational Plans and Desires has many students who desire and plan to go to college, whose parents want them to go to college, and who have high occupational aspirations A low scoring school has a smaller proportion of students with these kinds of aspirations. Table 4.3.10 gives the correlations of other variables with this index.

Inspection of Table 4.3.10 shows that high scoring schools, when compared with low scoring schools, tend to have:
more specialized staff and services
a somewhat more urban location
a better reputation among other educators in the area (as estimated by the principal)
a high percent of students in daily attendance

When teachers in high scoring schools are compared with their counterparts in low scoring schools we find that they tend to:
feel that the students put forth more effort and are of a higher academic ability
have origins in the higher socio-economic strata (except at grade twelve)
prefer to teach high ability students
be white
have higher vocabulary scores (except at grade twelve)
have attended a predominantly white undergraduate institution
have a high percentage of white students in their classes (except at grade twelve)

Students in high scoring schools tend to:
come from the higher socio-economic strata
have a more favorable family structure
have higher expectations, more studious habits and a

TABLE 4.3.10 CORRELATES OF THE STUDENT BODY'S EDUCATIONAL PLANS AND DESIRES

	1	3	6	9	12
SPECIALIZED STAFF AND SERVICES...........		.10	.20	.25	.15
RURAL-URBAN LOCATION OF SCHOOL...........		.01	.17	.26	.21
DAILY ATTENDANCE.........................		.15	.25	.28	.04
PRINCIPAL'S ESTIMATE OF SCHOOL REPUTATION.		.14	.23	.25	.17
TEACHING CONDITIONS......................		.28	.41	.40	.39
TEACHER'S SOCIO-ECONOMIC BACKGROUND.......		.08	.26	.20	-.03
PREFERENCE FOR HIGH ABILITY STUDENTS......		.17	.27	.22	.33
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP..		.28	.40	.21	-.04
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.		.26	.38	.19	-.03
PCT WHITE STUDENTS IN TEACHER'S CLASS.....		.31	.39	.24	-.03
TEACHER'S VOCABULARY SCORE...............		.22	.40	.23	.03
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE.		.51	.72	.69	.45
STUDENT BODY'S SOCIO-ECONOMIC STATUS......		.35	.64	.69	.49
STUDENT BODY'S ATTITUDE TOWARD LIFE.......		.41	.73	.63	.32
STUDENT BODY'S FAMILY STRUCTURE+STABILITY.		.39	.61	.56	.28
STUDENT BODY'S STUDY HABITS..............		.48	.77	.68	.43
STUDENT BODY'S ACHIEVEMENT LEVEL..........		.36	.64	.50	.34
PROPORTION OF FEMALES IN STUDENT BODY.....		.25	.30	.41	.15
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION..		.31	.45	.29	-.05
STUDENT BODY'S KINDERGARTEN ATTENDANCE....		.23	.57	.53	.13
NURSERY SCHOOL ATTENDANCE................		.25	.65		
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME..		.31	.40	.56	.31
PARENT SPKS. A FOREIGN LANGUAGE AT HOME...		.30	.42	.41	.14

TABLE 4.3.11 CORRELATES OF THE STUDENT BODY'S STUDY HABITS

	1	3	6	9	12
COMPULSORY ATTENDANCE LAW................		.27	.21	.15	-.03
DAILY ATTENDANCE.........................		.22	.21	.30	.21
TEACHING CONDITIONS......................		.39	.34	.30	.20
PREFERENCE FOR HIGH ABILITY STUDENTS......		.30	.26	.16	.16
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP..		.48	.42	.29	.14
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.		.48	.39	.29	.15
PCT WHITE STUDENTS IN TEACHER'S CLASS.....		.49	.43	.37	.13
TEACHER'S VOCABULARY SCORE...............		.43	.39	.24	.14
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE.		.52	.76	.82	.39
STUDENT BODY'S SOCIO-ECONOMIC STATUS......		.60	.60	.57	.34
STUDENT BODY'S ATTITUDE TOWARD LIFE.......		.41	.86	.79	.58
STUDENT BODY'S FAMILY STRUCTURE+STABILITY.		.60	.72	.82	.56
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES..		.48	.77	.68	.43
STUDENT BODY'S ACHIEVEMENT LEVEL..........		.52	.59	.46	.22
PROPORTION OF FEMALES IN STUDENT BODY.....		.40	.39	.65	.53
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION..		.53	.47	.43	.11
STUDENT BODY'S PARENTAL PTA ATTENDANCE....				.74	.33
STUDENT BODY'S KINDERGARTEN ATTENDANCE....		.42	.59	.52	.10
NURSERY SCHOOL ATTENDANCE................		.29	.77		
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME..		.48	.48	.76	.52
PARENT SPKS. A FOREIGN LANGUAGE AT HOME...		.44	.56	.67	.44
STUDENT BODY'S PARENTAL PTA ATTENDANCE..........				.74	.33

more favorable outlook on life
have higher achievement levels
have a higher proportion of female students as schoolmates
be white (except at grade twelve)
speak English at home and out of school
have attended kindergarten and nursery school

4.3.11. Correlates of Student Body's Study Habits

A school with a high score on Study Habits has proportionately many students who tend to:
have frequent discussions with their parents about their school work
were read to as children before they started school
read many books during the summer

A school with a low score has a higher proportion of students who either do not or did not engage in these kinds of activities (see Table 4.3.11).

When high scoring schools are compared with low scoring schools, we note that the only variables from the principal's questionnaire that have a relationship with Study Habits are the enforcement of a compulsory school law (except at the twelfth grade), and a high percent of students in daily attendance. The teachers in high scoring schools, when compared with their counterparts in low scoring schools, tend to:
feel that they have better teaching conditions
prefer to teach high ability students
be white
have higher vocabulary scores
have graduated from a predominantly white undergraduate institution and have a high percentage of white students in their classes. Students in high-scoring schools, when compared with students in low scoring schools, tend to:
come from the higher socio-economic strata
have a more favorable family structure
have higher expectations and desire to stay in school longer
have a more favorable outlook on life, including higher achievement levels
be predominantly female
be white

speak English at home and outside of school
have attended kindergarten and nursery school
have parents who attend PTA meetings frequently

4.3.12. Correlates of School Achievement Levels

Since the student's Achievement composite is one of the primary dependent variables in these analyses it will be helpful at this stage to scrutinize the kinds of variables with which it is correlated. Table 4.3.12 presents these correlations.*

When schools with high achievement levels are compared with schools with low achievement levels we note that they have:
more specialized staff and services
textbooks available in sufficient number
fewer pupils per teacher
a good reputation among other educators in the area (as estimated by the principal)
fewer school problems (stealing, property destruction, racial tension, etc.)
a compulsory school law that is enforced
a high percent of students in daily attendance
enrollment restricted to pupils from the same geographic attendance area, with few or no transfers

Teachers in schools with high achievement levels, when compared with teachers in lower scoring schools, tend to:
believe they have more desirable working conditions (the students put forth more effort, are of a higher academic ability, and create fewer problems, etc.)
have origins in the higher socio-economic strata
have graduated from a college that offered an advanced degree and that they felt had a high academic standing
be less involved in teaching related activities (time spent in preparation for class and counseling, reading educational journals, etc.)
prefer to teach high ability students
be white
have higher salary levels
have higher vocabulary test scores
have attended a predominantly white undergraduate institution
have a high percentage of white students in their classes

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* A school that scores high on this index has a high proportion of students with high scores on the Achievement composite for their grade level; a school that scores low has a high proportion of students with low scores.

TABLE 4.3.12 CORRELATES OF SCHOOL ACHIEVEMENT LEVELS

	1	3	6	9	12
SPECIALIZED STAFF AND SERVICES	.16	.20	.20	.31	.21
PUPIL ASSIGNMENT	.16	.16	.21	.21	.12
AVAILABILITY OF TEXTS	.16	.14	.19	.21	.22
COMPULSORY ATTENDANCE LAW	.30	.27	.34	.40	.27
PUPIL/TEACHER RATIO	-.14	-.11	-.12	-.34	-.21
TEACHER EXAMINATIONS	-.22	-.17	-.21	-.14	-.18
SCOPE AND SEVERITY OF SCHOOL PROBLEMS	-.22	-.17	-.19	-.22	-.20
DAILY ATTENDANCE	.31	.31	.36	.43	.27
PRINCIPAL'S ESTIMATE OF SCHOOL REPUTATION	.18	.25	.28	.27	.24
TEACHING CONDITIONS	.50	.55	.59	.47	.53
TEACHER'S SOCIO-ECONOMIC BACKGROUND	.13	.20	.29	.33	.27
TEACHER'S COLLEGE ATTENDED	.17	.19	.29	.31	.33
TEACHING RELATED ACTIVITIES	-.16	-.14	-.18	-.30	-.23
PREFERENCE FOR HIGH ABILITY STUDENTS	.29	.32	.38	.32	.40
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.52	.53	.73	.77	.75
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.49	.51	.70	.76	.76
TEACHER'S SALARY	.16	.19	.27	.24	.36
PCT WHITE STUDENTS IN TEACHER'S CLASS	.56	.58	.73	.75	.78
TEACHER'S VOCABULARY SCORE	.44	.47	.62	.58	.65
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE		.25	.50	.31	-.23
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.61	.68	.82	.82	.81
STUDENT BODY'S ATTITUDE TOWARD LIFE		.22	.60	.64	.62
STUDENT BODY'S FAMILY STRUCTURE+STABILITY	.37	.46	.67	.66	.63
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES		.36	.64	.50	.34
STUDENT BODY'S STUDY HABITS		.52	.59	.46	.22
PROPORTION OF FEMALES IN STUDENT BODY	.04	.12	.14	.28	.22
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.56	.63	.80	.84	.80
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.33	.33	.49	.46	.40
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.08	.28	.42	.43	.33
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.07	.27	.39	.23	.09

Students in schools with high achievement levels, when compared with students in low achieving schools, tend to:

come from the higher socio-economic strata
have a more favorable family structure
have higher expectations (except at the twelfth grade)
desire to stay in school longer
have more studious habits and a more favorable outlook on life
have a higher proportion of females as schoolmates
be white
have attended kindergarten
speak English at home and outside of school

4.3.13. Correlates of the Special Twelfth Grade Outcome Measures

Table 4.3.13 presents the correlations of Percent of Twelfth Grade Students Going on to College, Percent of Twelfth Grade Non-White Students Going on to College, Percent of Twelfth Grade Students Going on to Post-Secondary Vocational Training (secretarial school, beautician's training, etc.), Percent of Twelfth Grade Non-White Students Going on to Post-Secondary Vocational Training, and Percent of Boy Dropouts (i.e., the percent of boys who drop out of school after entering the tenth grade but before completing the twelfth grade).

Information on these topics was provided by the principals of the twelfth-grade schools. The variables, then, pertain to the student body of each twelfth-grade school as seen by the principal, not to a count of individual students. Variables that did not have a correlational value of .20 or greater with at least one of these outcome measures were eliminated.* For the most part, we discuss only correlations of .20 or greater. All outcome measures are scored or coded so that a high value indicates a high percentage.

Percent of Twelfth Grade Students Going on to College. Schools that have a higher percent of students going on to college, when compared to schools that have a lower percent, tend also to have:

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* Percent of Girl Dropouts was not included because it was so highly correlated (.87) with Percent of Boy Dropouts.

TABLE 4.3.13 CORRELATES OF THE SPECIAL
TWELFTH GRADE OUTCOME MEASURES

	PTO COL	PNT COL	PTO VOC	PNT VOC	PB DROP
PLANT AND PHYSICAL FACILITIES	.25	-.01	.14	-.04	-.07
INSTRUCTIONAL FACILITIES	.23	.08	.23	-.02	.04
SPECIALIZED STAFF AND SERVICES	.17	.13	.20	.08	.17
TRACKING AND ABILITY GROUPING	-.08	.15	.19	.09	.21
AVAILABILITY OF TEXTS	.15	-.13	-.12	-.11	-.21
PCT WHITE ENTERING VOCATIONAL SCHOOL	-.04	.01	1.00	.18	.02
RURAL-URBAN LOCATION OF SCHOOL	.11	.09	.01	.10	.25
PCT ENTERING COLLEGE	1.00	.11	-.04	.04	-.26
PCT NON-WHITE ENTERING COLLEGE	.11	1.00	.01	.51	.12
PCT NON-WHITE ENTERING VOCATIONAL TRNG	.04	.51	.18	1.00	.15
PCT GIRLS DROP-OUT	-.24	.07	-.03	.11	.87
PUPIL/TEACHER RATIO	-.13	.09	.20	.12	.19
NUMBER OF HRS. HOMEWORK EXPECTED PER DAY	.21	.05	-.05	-.11	-.04
TEACHER EXAMINATIONS	-.05	.00	-.05	.06	.20
NUMBER OF STUDENTS ENROLLED IN SCHOOL	.06	.16	.16	.16	.20
SCOPE AND SEVERITY OF SCHOOL PROBLEMS	-.10	.16	-.07	.11	.28
DAILY ATTENDANCE	.16	-.03	-.03	-.03	-.28
NUMBER OF YRS SNCE NON-WHITES ENTERED SCH.	.12	.24	.03	.13	.12
AGE OF BUILDING	.07	-.22	-.05	-.13	-.03
PRINCIPAL'S ESTIMATE OF SCHOOL REPUTATION.	.24	.11	.07	.05	-.03
PCT BOYS DROP-OUT	-.25	.12	.02	.15	1.00
TEACHING CONDITIONS	.57	-.02	.13	.02	-.28
LOCALISM OF TEACHER'S BACKGROUND	.23	-.06	-.09	-.10	-.19
TEACHER'S TRAINING	.07	.21	.09	.03	.08
PREFERENCE FOR HIGH ABILITY STUDENTS	.40	-.05	.03	-.15	-.23
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.31	-.14	.10	-.16	-.23
TEACHER'S ASSIGN. TO PRESENT SCHOOL	.19	-.23	.04	-.11	-.26
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.30	-.14	.08	-.14	-.18
PCT WHITE STUDENTS IN TEACHER'S CLASS	.31	-.22	.08	-.21	-.32
TEACHER'S VOCABULARY SCORE	.32	-.13	.07	-.19	-.19
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.61	-.07	.12	-.13	-.23
STUDENT BODY'S ATTITUDE TOWARD LIFE	.36	-.07	.01	-.12	-.31
STUDENT BODY'S FAMILY STRUCTURE+STABILITY.	.34	-.10	.10	-.06	-.27
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES	.60	.08	-.03	.01	-.14
STUDENT BODY'S STUDY HABITS	.25	.00	-.04	-.07	-.16
STUDENT BODY'S ACHIEVEMENT LEVEL	.56	-.13	.11	-.14	-.30
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.30	-.21	.11	-.20	-.30

a larger physical plant
more instructional facilities
more specialized staff and services
fewer boy and girl dropouts
a better reputation, as estimated by the principal
a greater amount of homework
more favorable teaching conditions, as viewed by the teachers
more cosmopolitan teachers (viz. they have experienced more geographic mobility in obtaining their education)
teachers who prefer high ability students

The teachers in these schools tend to be white, to have gone to predominantly white undergraduate institutions, and to teach mainly white students of higher socio-economic status who have a favorable attitude toward life and a family structure that is positively related to achievement. The same schools also tend to have a high proportion of students who are interested in further education, are more studious, have higher achievement levels, and tend to be white.

Percent of Twelfth Grade Non-White Students Going on to College. Schools that have a higher percent of non-white students going on to college tend also to have a higher percent of students going on to post-secondary vocational training. There is a slight tendency for these schools to have newer buildings, to have been integrated longer, to have better-trained teachers who attended predominantly non-white undergraduate institutions and were assigned to their present school, (rather than having elected to teach in the school). They also tend to have predominantly non-white students.

Percent of Twelfth Grade Students Going on to Post-Secondary Vocational Training. Schools with a high percent of twelfth grade graduates going on to some form of vocational training tend to have more instructional facilities, more specialized staff and services, and more pupils per teacher. They also tend to practice tracking. Some of these relationships may be explained by the fact that larger schools tend to have vocational programs. Such programs require more specialized facilities and services. It also seems likely that participation in these programs may encourage students to pursue further work at the post-secondary level.

Percent of Twelfth Grade Non-White Students Going on to Post-Secondary Vocational Training. Schools with a high percent of non-white graduates going on to post-secondary vocational training also tend to have a high percent of non-white graduates going on to college, teachers who scored lower on the vocabulary test and attended predominantly non-white undergraduate institutions, and a higher proportion of non-whites in the student body.

Percent of Boy Dropouts. Since schools that have a high percent of boy dropouts also have a high percent of girl dropouts, this variable can be regarded as representing the percent of all students who drop out before completing the twelfth grade.

Schools that experience a high percent of student dropouts tend to:
practice ability grouping and tracking
not have sufficient texts available
be more urban in their location
have fewer graduates going on to college
be larger and have more pupils per teacher
use teacher examinations in the appointment process
have a smaller percent of students in daily attendance
have many problems (discipline of students, vandalism, etc.), as estimated by the principal

Teachers in these schools tend to:
view the school as a less desirable teaching situation
have experienced more mobility in their careers
have a slightly lower preference for teaching high ability students
be non-white
have lower scores on the vocabulary test
have a high proportion of non-white students in their classes
have been assigned to the school in which they are currently teaching

The students in these schools tend to be from the lower socio-economic strata and to have a less well-knit family structure, a less favorable attitude toward life, and lower achievement levels. They also tend to be non-white.

SUMMARY

This chapter presented a list of all the variables to be used in subsequent analyses. Correlations of these variables with variables that were deemed to be of special interest were discussed and summarized. The upper limit of the percent of variance that can be explained by studying the correlates of differences among schools was given for a number of different school outcome measures, as well as for a number of variables concerned with the nature and composition of the student body.

The measures that had the greatest number of variables correlated with them were Student Body's Socio-Economic Status, Achievement and Racial-Ethnic Composition. The next highest in this respect were Principal's Training; Student Body's Family Structure, and Attitude Towards Life; School's Rural-Urban Location; Student Body's Educational Plans and Study Habits; and School's Size (Enrollment). The third highest included Percent Going to College, the Student Body's Expectations, and Percent of Dropouts. The lowest group included Pupil-Teacher Ratio, Percent Non-White Going to College, Percent Going on to Vocational Training (both Total and Non-White).

5. REGRESSION AND COMMONALITY ANALYSES OF SCHOOL ATTRIBUTES AND OUTCOMES

This entire study is based on the assumption that at least some of the differences among public schools in the United States are related in a causal manner to the attitudes and achievement levels of their students. Our objective, then, is twofold: to find characteristics or attributes of the schools that seem to be related to school outcomes, and to suggest which of these characteristics may be most important in producing these outcomes. In this chapter we attempt to pinpoint a number of such characteristics. Since the data being used are associational in nature, and since we realize that there are pitfalls in making causal inferences from associational data, associational language will be used in discussion and summarization. Possible causal inferences will be reserved till last, as part of the chapter summary. At this point, too, we will state explicitly how we think these associational data can be used as a basis for such causal inferences.

5.1. Selection of Variables for Analysis

In order to waste as few of our data as possible we conducted an analysis using every one of our indices, together with a number of variables deemed to be of special interest.* However, in order to assign each index a part in the analysis we had to make certain decisions that require comment here. Some of the student indices, in addition to Achievement, can be regarded as being influenced by both the school and the student's home background. Others, however, are relatively uninfluenced by the school. For example, the student's Socio-Economic Status, Family Structure and Racial-Ethnic group membership are not readily influenced by the school. But they do have important influences, as we suggested in the previous chapter, on the functioning of the schools. Still other indices, such as the student's Expectations, Attitude Toward Life, Educational Plans and Desires, and Study Habits can be influenced by both the home background and the school. Because of these considerations the following indices,* in addition to the Achievement composite, were included as dependent variables, or outcome measures, in our analyses.

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* E.g., Pupil Teacher Ratio and Teacher's Racial Ethnic Group Membership.

DEPENDENT VARIABLES (OUTCOME MEASURES)

Expectations for Excellence
Attitude Toward Life
Educational Plans and Desires
Study Habits
Achievement
Percent of Twelfth Grade Graduates Going on to College
Percent of Twelfth Grade Non-White Graduates Going on to College
Percent of Twelfth Grade Graduates Going on to Vocational Training
Percent of Twelfth Grade Non-White Graduates Going on to Vocational Training
Percent of Tenth Grade Boys Who Drop Out of School Before Completion of the Twelfth Grade

It is often assumed in this type of analysis that schools must be equated for the kinds of students they get initially. Thus if school "A" has children primarily from families where intellectual activities are not valued or pursued, and school "B" has children from families that are just the opposite, then one would expect the students in school "B" to have higher achievement levels than those in school "A". The difference between these two groups of students can be attributed to differences in their families, not their schools.

We saw no reason to quarrel with this type of approach. It seemed most appropriate to equate schools for differences in their students' home background and racial-ethnic composition. To represent home background we selected the student index of Socio-Economic Status and that of Family Structure and Stability. To represent the racial and ethnic composition of the student body we used student Racial-Ethnic Group Membership. These variables are defined elsewhere.*

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* See Chapter 3 for the manner of index construction, and Appendices III, VI and IX for descriptions of the variables involved.

Other variables that might have been included in Student Body Social Background, such as whether English as opposed to some other language is spoken in the home, were excluded on the grounds that the social background of the students should be represented, insofar as possible, by a set of explanatory variables that could be considered absolutely basic to the family's position in society. For example, both the racial-ethnic background of a family and its socio-economic status can be used to explain, in part, whether or not English is spoken in the home.†

School Variables. As an aid in the selection of a comprehensive set of school variables a number of preliminary regression analyses were conducted. The analyses resulted in selection of the set of school variables given below.‡

FACILITIES

(1) Plant and Physical Facilities
(2) Instructional Facilities
(3) Age of Building
(4) Pupils Per Room

PUPIL PROGRAMS AND POLICIES

(1) Tracking
(2) Testing
(3) Transfers
(4) Remedial Programs

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* In Chapter 3 and Appendix III.

† Many of these potential background variables are analyzed in Chapter 6.

‡ Exclusion of the other school variables resulted in a loss of only one percent of the variance. See Mayeske et al., Technical Note No. 61 in the List of References.

(5) Free Milk and Lunch Programs
(6) Accreditation
(7) Age of Texts
(8) Availability of Texts
(9) Pupil Teacher Ratio
(10) Enrollment

SCHOOL PERSONNEL AND PERSONNEL EXPENDITURES

(1) Principal's Experience
(2) Principal's Training
(3) Principal's College Attended
(4) Principal's Sex
(5) Principal's Estimate of the School's Reputation
(6) Specialized Staff and Services
(7) Teacher's Experience
(8) Teacher's Training
(9) Teacher's Socio-Economic Background
(10) Teacher's Localism
(11) Teacher's College Attended
(12) Teaching Conditions
(13) Teaching Related Activities
(14) Preference for Student Ability Level
(15) Teacher's Sex
(16) Teacher's Racial-Ethnic Group Membership
(17) Teacher's Vocabulary Score

Thus the total set of school variables is comprised of the four Facilities variables, the ten Pupil Program and Policy variables, and the seventeen School Personnel and Personnel Expenditure variables. This set of thirty-one variables will hereafter be referred to as the set of "School" variables.

5.2. A Critical Assumption in Studying School Influences

Before equating schools for the social background of their students it may be instructive to look at the correlations of our Social Background variables, both with one another and with the outcome measures of interest. These correlations are given in Table 5.2.1 for grades 1, 3, 6 and 9, and in Table 5.2.2 for grade 12.

Table 5.2.1. - Intercorrelations of the Regressor and Dependent Variables for the Ninth, Sixth, Third and First Grades

Ninth/Sixth *

	SES 1	FSS 2	REC 3	EXP 4	ATT 5	ED PLN 6	STDY 7	ACH 8	SCHOOL VARIABLES† 9
1. Socio-Economic Status (SES)	100	60	67	48	58	64	60	82	80
2. Family Structure and Stability (FSS)	67	100	66	67	73	61	72	67	67
3. Racial-Ethnic Composition (REC)	68	70	100	46	51	45	47	80	91
4. Expectations (EXP)	47	66	28	100	77	72	76	50	48
5. Attitude Toward Life (ATT)	60	75	60	72	100	73	86	60	30
6. Educational Plans and Desires (ED PLN)	69	56	28	69	62	100	77	64	57
7. Study Habits (STDY)	57	82	42	82	79	68	100	59	28
8. Achievement (ACH)	82	66	84	31	64	50	46	100	86
9. School Variables (Full set of 31)†	82	65	92	42	59	56	45	87	100

*The ninth grade correlations are below the main diagonal and the sixth grade above the main diagonal. All correlations have been rounded to two places of decimals and leading decimal points omitted.

†This row contains the full set of school variables with each of the other variables. There were 923 schools included in the ninth grade analyses and 2,372 for the sixth grade.

Table 5.2.1. - (continued)

	Third/First								
	SES 1	FSS 2	REC 3	EXP 4	ATT 5	ED PLN 6	STDY 7	ACH 8	SCHOOL VARIABLES† 9
1. Socio-Economic Status (SES)	100	44	60					61	73
2. Family Structure and Stability (FSS)	48	100	59					37	66
3. Racial-Ethnic Composition (REC)	65	58	100					56	92
4. Expectations (EXP)	28	47	23	100					
5. Attitude Toward Life (ATT)	20	46	22	51	100				
6. Educational Plans and Desires (ED PLN)	35	39	31	51	41	100			
7. Study Habits (STDY)	60	60	53	52	41	48	100		
8. Achievement (ACH)	68	46	63	25	22	36	52	100	68
9. School Variables (Full set of 31)†	78	56	90	28	30	38	60	70	100

*The third grade correlations are below the main diagonal and the first grade above the main diagonal. Indices other than those presented were not available for the first grade.

†This row or column contains the full set of school variables with each of the other variables. There were 2,453 schools included in the third grade analyses and 1,302 for the first grade.

Table 5.2.2. - Intercorrelations of the Twelfth Grade Regressor and Dependent Variables

	1 SES	2 FSS	3 REC	4 EXP	5 ATT	6 ED PLN	7 STDY	8 ACH	9 PTCOL	10 PNTOCOL	11 PTOVOC	12 PNTOVOC	13 PBDRP
1. Socio-Economic Status (SES)	100	53	59	- 15	44	49	34	81	61	- 07	12	- 13	- 23
2. Family Structure and Stability (FSS)	53	100	59	- 03	67	28	56	63	34	- 10	10	- 06	- 27
3. Racial-Ethnic Composition (REC)	59	59	100	- 38	54	- 05	11	80	30	- 21	11	- 20	- 30
4. Expectations (EXP)	- 15	- 03	- 38	100	09	45	39	- 23	- 01	- 06	- 10	- 02	05
5. Attitude Toward Life (ATT)	44	67	54	09	100	32	58	62	36	- 07	01	- 12	- 31
6. Educational Plans and Desires (ED PLN)	49	28	- 05	45	32	100	43	34	60	08	- 03	01	- 14
7. Study Habits (STDY)	34	56	11	39	58	43	100	22	25	00	- 04	- 07	- 16
8. Achievement (ACH)	81	63	80	- 23	62	34	22	100	56	- 13	11	- 14	- 30
9. Percent Going on to College (PTOCOL)	61	34	30	- 01	36	60	25	56	100	11	- 04	04	- 26
10. Percent Non-White Going on to College (PNTOCOL)	- 07	- 10	- 21	- 06	- 07	08	00	- 13	11	100	01	51	12
11. Percent Going to Vocational Training (PTOVOC)	12	10	11	- 10	01	- 03	- 04	- 11	- 04	01	100	18	02
12. Percent Non-White Going to Vocational Training (PNTOVOC)	- 13	- 06	- 20	- 02	- 12	01	- 07	- 14	04	51	18	100	15
13. Percent of Boy Dropouts (PBDRP)	- 23	- 27	- 30	05	- 31	- 14	- 16	- 30	- 26	12	02	15	100
14. School Variables (Full Set of 31)*	86	70	95	62	65	65	40	89	72	45	51	48	56

*This row contains the multiple correlation of the full set of 31 school variables with each of the other variables. There were 780 schools included in these analyses. All correlations have been rounded to two places of decimals and leading decimals points omitted.

The terminology used in these tables is in keeping with our earlier agreement to use associational rather than causal language. Accordingly the term "regressor" variable is used instead of "independent" variable, and "dependent" variable indicates a variable that exhibits values associated with or related to the regressor variables, but not necessarily in a causal relationship.

The correlates of Achievement are given in row 8 and column 8 of Tables 5.2.1 and 5.2.2. Let us focus here on the manner in which the three Social Background variables of Socio-Economic Status, Family Structure, and Racial-Ethnic composition relate to Achievement at the different grade levels. It will be seen that the correlations with Achievement tend to increase in magnitude as the students progress through the higher grade levels. This same trend tends to hold good for some of the other outcome measures. The correlations here suggest that after schools have been equated for these initial differences they may exhibit very few differences, in Achievement or in the other outcome measures, that can be related to other school variables.

Table 5.2.3 gives the squared multiple correlations for the regression of the Outcome measures on the three student body variables of Socio-Economic Status, Family Structure, and Racial-Ethnic composition. Why should school achievement be so highly predictable from these three variables? One interpretation is that the results reflect the current social organization of our school system. Thus, schools are organized along residential lines, and residential areas are in turn organized along socio-economic and racial-ethnic lines. This line of thought is further supported by the analyses of individual students (see p. 55 above), when they are not aggregated by schools. These analyses showed that individual student achievement was moderately predictable from the student's Socio-Economic Status, Family Structure and Racial-Ethnic group membership.

One can infer that some kind of a sorting process is going on here. White students, presumably, have higher achievement levels and socio-economic status.

Table 5.2.3. - Squared Multiple Correlations* for Regression of Outcome Variables Against Student Body Social Background and School Variables

Grade Level	Variable Set	Expectations	Attitude Toward Life	Educational Plans	Study Habits	Achievement	Percent to College		Percent to Vocational		Percent of Boy Dropouts
							All	Non-White	All	Non-White	
TWELFTH	1. Student Body	20	48	47	42	82	38	05	02	05	10
	2. School	38	42	42	16	79	51	20	26	23	32
	3. Student Body and School	44	56	61	56	86	57	23	27	24	34
	4. (3) - (1)†	25	07	15	14	04	19	18	25	20	24
	5. (3) - (2)†	06	14	19	40	08	06	03	01	02	03
NINTH	1. Student Body	52	58	61	74	82					
	2. School	18	35	32	20	76					
	3. Student Body and School	63	64	67	78	87					
	4. (3) - (1)†	11	05	06	04	05					
	5. (3) - (2)†	45	29	35	58	11					
SIXTH	1. Student Body	46	57	50	57	79					
	2. School	23	30	33	28	73					
	3. Student Body and School	49	58	52	60	83					
	4. (3) - (1)†	03	02	02	02	04					
	5. (3) - (2)†	26	29	19	31	10					
THIRD	1. Student Body	24	22	19	49	53					
	2. School	08	09	15	36	49					
	3. Student Body and School	26	27	21	53	56					
	4. (3) - (1)†	03	06	03	04	04					
	5. (3) - (2)†	19	18	07	17	07					
FIRST	1. Student Body					43					
	2. School					47					
	3. Student Body and School					52					
	4. (3) - (1)†					09					
	5. (3) - (2)†					05					

*Rounded to two places of decimals with leading decimal points deleted.
†Apparent errors due to rounding after subtractions.

They go to school with other students of the same kind. This has the effect of making their aggregated school achievement more predictable than their individual achievement. It does not, however, explain why the predictability of school Achievement increases as one progresses from the lower to the higher grade levels.

If one is willing to grant that some kind of a sorting process takes place, then what can one say about the possible influence of School variables? Table 5.2.3 shows that almost all of the Outcome measures, with the notable exception at the twelfth grade of Expectations and the special outcome measures, are more predictable from the Student Body Social Background variables than from the School variables.

It will be noted that the unique portions associated with the School variables are small. Does this mean that they are unimportant? Not necessarily. As we suggested earlier, the School variables tend to be bound up with the Student Body Social Background variables. A measure that expresses this degree of overlap or commonness is given below.*

5.3. Commonality Analyses: The Two-Set Case

5.3.1. Development of a Measure of Commonality for Two Sets of Variables

Consider the case where there are two sets of variables: a set of Student Body Social Background variables (B), and a set of School variables(S).

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* A mathematical exposition of this technique is given in Appendix II.

Let

C(BS) be the second-order commonality coefficient, viz., that portion of the squared multiple correlation that may be associated with either B or S

R^2(B) be the squared multiple correlation of B with the dependent variable

R^2(S) be the squared multiple correlation of S with the dependent variable

R^2(BS) be the squared multiple correlation of B and S with the dependent variable

then

$U(B) = R^2(BS) - R^2(S)$ means that the unique portion or first-order commonality coefficient*, U(B), is that portion of R^2(BS) that can only be associated with B

and

$U(S) = R^2(BS) - R^2(BS)$ means that the unique portion or first-order commonality coefficient*, U(S), is that portion of R^2(BS) that can only be associated with S

Then

$$C(BS) = R^2(BS) - U(B) - U(S)$$

and

R^2(S) can be expressed as $R^2(S) = C(BS) + U(S)$

and

R^2(B) can be expressed as $R^2(B) = C(BS) + U(B)$

---

* Often abbreviated to "unique association."

The values for U(B), U(S), C(BS), R^2(B), R^2(S) and R^2(BS) may be given in tabular form as follows:

Commonality Coefficients		Sets of Regressor Variables	
		B	S
First Order	U(B)	XXX	
First Order	U(S)		XXX
Second Order	C(BS)	XXX	XXX
R^2 For a Single Set of Variables		R^2(B)	R^2(S)
R^2 For Both Sets of Variables		R^2(BS)	R^2(BS)

In the above table the first column refers to the Student Body variables (B). The XXX's and R^2 represent empirically observed values. In reading down this column, the first entry, U(B) is the portion of R^2(BS) uniquely associated with the Student Body variables. The second entry is the value for the second order commonality coefficient C(BS). These two entries sum to the squared multiple correlation, R^2(B). The squared multiple correlation R^2(BS) obtained when both sets of variables are entered into the regression is presented for purposes of comparison with the squared multiple correlations for the individual sets of variables. The second column refers to the School variables (S). The XXX's sum to the squared multiple correlation, R^2(S). Table 5.3.2.1 gives these different values for the main dependent variables and Table 5.3.2.2 for the special twelfth-grade outcome measures.

5.3.2. Regression and Commonality Analyses for Two Sets of Variables

The main question for which answers are being sought in this section is: How much of the predictable variance in our measures of School Outcomes can be uniquely apportioned to either B or S, and how much is common to both? If the amount of predictable variance they have in common is a large one, then it will be very difficult to infer anything at all about school influences as such.

Table 5.3.2.1 illustrates the means by which we have endeavored to answer this type of question. It will be seen here that for Expectations for Excellence there is a general increase in the level of predictability,* followed by a decrease at the twelfth grade, when both sets of variables are entered into the regression. Inspection of the unique portions shows a decrease for B and an increase in S up to the twelfth grade, at which point there is a dramatic reversal in their respective magnitudes. It will also be seen that the second-order commonality coefficient, C(BS), behaves in a somewhat erratic manner. What does appear as a clear trend is that the unique portion for S assumes a larger role at grades twelve and nine.

The behavior of Attitude Toward Life is more consistent. The absolute level of predictability† tends to increase as one ascends the grade levels, but then drops slightly at the twelfth grade. The unique portion for B behaves in similar fashion. The unique portions for S remain low, although they are slightly higher at the twelfth grade. The commonality coefficients show a progressive increase as one moves up the levels. This trend suggests that the School variables and the Student Body variables become more correlated with one another in their prediction of Attitude Toward Life the longer they are associated with one another as part of the educational process.

Educational Plans and Desires shows a consistent increase in the squared multiple correlation for both sets of variables through grade nine, and then a slight decline at grade twelve. The unique portion for B follows the same trend. There is a marked increase in C(BS) from the third to the sixth grade, but it tapers

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* I.e. in the absolute value of the squared multiple correlation.

† I.e. the squared multiple correlation for both sets combined.

Table 5.3.2.1. - Squared Multiple Correlations* of B and S With Dependent Variables, Expressed as a Function of Their Unique Association and Their Commonality Coefficients

Grade Level	Commonality Coefficients	Expectations		Attitude Toward Life		Educational Plans & Desires		Study Habits		Achievement		No. of Schools
		B	S	B	S	B	S	B	S	B	S	
TWELFTH	First Order U(B)	06		14		19		40		08		
	U(S)		25		07		15		14		04	
	Second Order C(BS)	13	13	35	35	27	27	01	01	75	75	
	R^2 for a Single Set of Variables	20	38	48	42	47	42	42	16	82	79	
	R^2 for Both Sets of Variables (Band S)	44	44	56	56	61	61	56	56	86	86	780
NINTH	First Order U(B)	45		29		35		58		11		
	U(S)		11		05		06		04		05	
	Second Order C(BS)	07	07	30	30	26	26	16	16	71	71	
	R^2 for a Single Set of Variables	52	18	58	35	61	32	74	20	82	76	
	R^2 for Both Sets of Variables (Band S)	63	63	64	64	67	67	78	78	87	87	923
SIXTH	First Order U(B)	26		29		19		31		10		
	U(S)		03		02		03		02		04	
	Second Order C(BS)	20	20	28	28	31	31	26	26	69	69	
	R^2 for a Single Set of Variables	46	23	57	30	50	33	57	28	79	73	
	R^2 for Both Sets of Variables (Band S)	49	49	58	58	52	52	60	60	83	83	2372
THIRD	First Order U(B)	19		18		07		17		07		
	U(S)		03		06		03		04		04	
	Second Order C(BS)	05	05	03	03	12	12	32	32	45	45	
	R^2 for a Single Set of Variables	24	08	22	09	19	15	49	36	53	49	
	R^2 for Both Sets of Variables (Band S)	26	26	27	27	21	21	53	53	56	56	2453
FIRST	First Order U(B)									05		
	U(S)										09	
	Second Order C(BS)									38	38	
	R^2 for a Single Set of Variables									43	47	
	R^2 for Both Sets of Variables (Band S)									52	52	1302

*Rounded to two places of decimals with leading decimal points deleted.

off. The larger unique portions for S at grades nine and (especially) twelve, combined with a relatively stable second-order commonality, suggest that the schools have a greater role in influencing this outcome at the higher grade levels.

The squared multiple correlations obtained when both sets of variables are entered into the regression show a consistent increase for Study Habits through grade nine, followed by a decrease at grade twelve. The unique portion for B increases at the higher grade levels, while the unique portions for S remain similar -- except at grade twelve, where they almost triple in magnitude. It is of interest to note that the second-order commonality coefficient, C(BS), decreases as the grade level increases. This trend, coupled with the increases in the unique portions for B at the higher grade levels, suggests that the Student Body variables may play an increasingly important role in Study Habits that bears little relationship to the school's facilities, staff, or programs.

Perhaps the most important variable in Table 5.3.2.1 is Achievement, in the right-hand column. It is well represented at all grade levels. Since students were tested in the early fall, about three weeks after the semester had started, we can get some idea of how the School variables relate to Achievement at the first grade before they have had much of an opportunity to influence the students. In a sense, this is a near-zero point in the relationship. In fact, most of the relationships of the outcome variables at this point reflect the manner in which the nature of the student inputs are related to school attributes or resources. We saw in Table 5.2.1 that at the first grade the school variables were moderately to highly related to the students' Achievement, Socio-Economic Status, Family Structure and Racial-Ethnic Composition. The last three variables are in turn moderately related to Achievement. Table 5.3.2.1 shows that when both sets of variables are entered into the regression the squared multiple correlation at the first grade is about .52.

Interestingly enough, at the first grade Achievement is slightly more predictable with S than with B.*

Similarly, there is a greater unique portion here for S than for B. This correlation of S with B as they relate to Achievement is reflected by C(BS). It indicates that white children from the higher socio-economic strata enter school with higher achievement levels than do non-white students from the lower socio-economic strata. It also indicates that the white children tend to enroll in schools that have attributes or resources differing systematically from those of the schools in which the lower-class, non-white students enroll.†

Some indication of the kinds of variables involved in the relatively large unique portion for S at the first grade can be obtained from Table 6.5.1 (p. 184). The School variables that retain a relationship with Achievement after correlations attributable to the Student Body's Social Background have been partialed out are: Teaching Conditions, Percent White of the Students in Teacher's Class, Teacher's Vocabulary Score, and Percent of Students Who Attended Kindergarten. A number of these same variables also retain partial relationships at the higher grade levels (see Tables 6.5.1 - 6.5.4). It will be remembered that much of this information was given us by the school's staff. If there is consistency in the kinds of students they get every year, then certain things the staff say about their most recent students will also hold for the students they are about to receive. If so, this would help to explain the existence of a unique contribution of S to the prediction of Achievement at a near-zero point in the possible influence S could have had on Achievement.

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* An analysis at the first grade was run to find out if a more comprehensive set of student body variables would reduce the magnitude of the unique portion for the School variables. In addition to Socio-Economic Status, Family Structure and Racial-Ethnic Composition, Percent of Entering Students Who Had Attended Kindergarten was included in the Student Body set, and the same for nursery school. Although this larger set slightly increased both the commonality and the unique portion for B, it left the unique portion for S relatively unchanged.

† The kinds of school variables that are related to Achievement were discussed in Chapter 4.

It is also noteworthy that the squared multiple correlations show a sharp increase from the third to the sixth grade and they remain high at the higher grade levels. A reversal in the unique portion for B and S occurs at the third grade, and this trend persists at the higher grades. The second-order commonality coefficient shows a progressive increase from the first to the twelfth grades. Taken together, these trends suggest that the role the schools play in the achievement levels of their students may well be bound up with the kinds of students they get initially.

Table 5.3.2.2 presents the squared multiple correlations and unique portions for those dependent or outcome variables that are specific to schools with a twelfth grade. These variables are:
the percent of students from last year's graduating class who went on to a regular two-year or four-year college
the percent of non-white students from last year's graduating class who went on to a regular two-year or four-year college
the percent from last year's graduating class who went on to some post-high-school education or training other than a junior college or four-year college
the percent of non-whites from last year's graduating class who went on to some post-high-school education or training other than a junior college or four-year college
the approximate percent of boys who entered the tenth grade but dropped out before graduation*

For Percent Going on to College inspection of Table 5.3.2.2 shows that B has a smaller unique portion than S. However, the second-order commonality coefficient shows that most of the variance predictable from B is bound up with S. Further, Percent Going to College is more predictable from S. These results suggest that the schools may play a greater role in Percent Going to College than does the student's social background.

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* Excluding transfers.

Table 5.3.2.2. - Squared Multiple Correlations* of the Twelfth-Grade Student Body (B) and School Variables(S) With the Twelfth-Grade Outcome Measures Expressed as a Function of Their Unique Association and Their Commonality Coefficients

Commonality Coefficients†	B	S	B	S	B	S	B	S	B	S
First Order	06	19	03	18	01	25	02	20	03	24
Second Order C(BS)	32	32	02	02	01	01	03	03	08	08
R^2 for a Single Set of Variables	38	51	05	20	02	26	05	23	10	32
R^2 for Both Sets of Variables (Band S)	57	57	23	23	27	27	24	24	34	34
Dependent Variables	Percent Going on to College		Percent Non-White Going on to College		Percent Going on to Vocational Training		Percent Non-White Going on to Vocational Training		Percent of Boys Who Drop Out	

†There were 780 schools included in these analyses.

*Rounded to two places of decimals with leading decimal points deleted.

Nevertheless, the large area of overlap indicates that white students from the higher socio-economic strata are the ones who tend to go on to college, and that they also tend to go to school with one another.

A somewhat different trend holds for the four remaining outcome variables. Although S still has a greater unique portion than B, and although the outcome variables are more predictable from S than from B, the second-order commonality coefficient C(BS) is smaller for these four variables. These results suggest that S may have a greater role than B to play in these outcomes independently of the kinds of students that the schools get initially. A later section of this chapter attempts to determine the aspects of the school for which this is true.

The skeptic might argue, however, that the above trends may be due to one of the following considerations, or even to a combination of both:
(1) indices such as Socio-Economic Status, Family Structure and Achievement are comprised of fewer variables at the lower grade levels, which would tend to result in a lower correlation of the indices with other variables
(2) similar kinds of variables* are included in both S and B, which would tend to inflate the correlations of School variables with Student Body variables as they relate to the Outcome measures.

Let us consider (1) first. Certainly, caution must be exercised in inferring a trend for those outcome measures, such as Expectations and Attitude Toward Life, that are sparsely represented at the third grade. It should be pointed out, however, that this representation improves markedly at the sixth grade, and is identical for the ninth and twelfth grades. Moreover, the problem is least acute for Socio-Economic Status and Family Structure, since they are the indices best represented at all grade levels. For the School variables the problem does not arise at all, since they are the same for the different grade levels. Indeed, many of the schools that have student information for grade one in the sample also have student information for grades three and six in the sample. As for Achievement, it is well to recall from Table 4.2 in Chapter 4 that about 36% of total Achievement variance is associated with the schools students attend, for all grade levels. The relative constancy of these values suggests that although caution must be exercised in inferring trends for the different outcome measures, this problem is least prevalent for Achievement.

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* E.g., student's Racial-Ethnic Group Membership and teacher's ditto.

In reply to (2), it can be pointed out that a number of preliminary analyses were conducted as a guide in selecting a comprehensive set of school variables. One of these analyses, given in Table 5.3.2.3, involved eliminating the teachers' Racial-Ethnic composition. When the values in Table 5.3.2.3 are compared with their counterparts in Table 5.3.2.1 it becomes clear that the decrease in the squared multiple correlation when both sets of variables are entered into the regression is very small. There is also little or no decrease in the squared multiple correlations for B and S alone, or in the unique portions and second-order commonality coefficients for all of the outcome measures, except Achievement. Here, C(BS) shows a marked decrease, as does the squared multiple correlation of S. The unique portion for S stays about the same, while the unique portion for B about doubles in magnitude. Thus what was common to the Racial-Ethnic composition of both the student body and the teachers has now been attributed to B.

Since the reduction in predictability for S is small for all the dependent variables except Achievement, these analyses suggest that there may be something about being a white or non-white teacher that is of considerable importance for Achievement but not for the other variables. Perhaps there is an entire constellation of lifetime events involved in being a white or non-white teacher that is just not covered by our set of teacher and other school indices (see below, p. 129). In any case, the teachers' Racial-Ethnic Composition, rather than being a variable to be excluded from the analysis, appears to be an essential ingredient in it, especially for school Achievement.

Table 5.3.2.3. - Squared Multiple Correlations* of the Ninth-Grade Student Body (B) and School Variables (S) Excluding Teacher Racial-Ethnic Composition, Expressed as a Function of Their Unique Association and Their Commonality Coefficients

Commonality Coefficients†	B	S	B	S	B	S	B	S	B	S
First Order	45	10	34	05	35	06	59	04	23	04
Second Order C(BS)	07	07	25	25	26	26	15	15	59	59
R^2 for a Single Set of Variables	52	17	58	30	61	32	74	19	82	63
R^2 for Both Sets of Variables (Band S)	62	62	64	64	66	66	78	78	87	87
Dependent Variable	Expectations		Attitude Toward Life		Educational Plans and Desires		Study Habits		Achievement	

†There were 923 schools included in these analyses.

*Rounded to two places of decimals with leading decimal points deleted.

The skeptic may still feel that we need a subset of school variables that is less bound to existing social conditions. An attempt was made to select such a subset in order to re-run these analyses. However, inspection of these variables showed that very few of them lacked some relationship to the socially determined needs or advantages of the student body. For example, free lunch and milk programs tend to be found in non-white schools of lower SES, while the size, facilities and expenditures of a school are related to whether its location is rural or urban.* Indeed, if a school is at all influenced by the resources of its students or responsive to their needs, then many of the school variables will of necessity be related to the nature of the student body. Consequently, the set of school variables should be comprehensive in nature.

It may also be suggested that, since there are regional differences in Achievement and perhaps in other School Outcomes as well, differences that might better be attributed to regions are being attributed to differences among schools. There is some justice in this objection, inasmuch as regional differences, as well as differences among rural, urban, and suburban schools are of interest. A later report in this series will address itself to this topic. The present report, however, addresses itself more to differences among schools on a nationwide basis.†

In view of the small unique portion for S with some of the outcomes, there remains the question of whether or not any particular subset of School variables has higher commonality coefficients with B than other subsets. In order to answer this question, it is necessary to develop commonality coefficients for four sets of variables.

5.4. Commonality Analyses: The Four-Set Case

The four-set case is considerably more complicated than the two-set case because a number of higher-order commonality coefficients are introduced.*

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* See Chapter 4,

† See Chapter 7 , below, for an attempt to develop a school taxonomy that would supplant both regional and rural-urban groupings.

5.4.1. Development of Commonalities for Four Sets

Let the four sets of variables be denoted by X_1, X_2, X_3, and X_4. Then the unique portion or first-order commonality coefficients for the ith set is given by

$$U(X_i) = R^2(X_1\ X_2\ X_3\ X_4) - R^2(X_j\ X_k\ X_1)$$

where

$R^2(\ )$ represents the squared multiple correlation for the particular set of variables in parenthesis with the dependent variable.

As an example, the unique portion for the fourth set would be written as

$$U(X_4) = R^2(X_1\ X_2\ X_3\ X_4) - R^2(X_1\ X_2\ X_3)$$

There is one unique value for each set of variables (in this case, the value is four).

The second-order commonality coefficient is given by

$$C(X_i\ X_j) = R^2(X_1\ X_2\ X_3\ X_4) - R^2(X_k\ X_1) - U(X_i)$$

As an example, the second-order commonality coefficient for the third and fourth sets is

$$C(X_3\ X_4) = R^2(X_1\ X_2\ X_3\ X_4) - R^2(X_1\ X_2) - U(X_3) - U(X_4)$$

There is one second-order commonality coefficient for each combination of sets (in this case, it is six).

The third-order commonality coefficient is given by

$$C(X_i\ X_j\ X_k) = R^2(X_1\ X_2\ X_3\ X_4) - R^2(X_1) - C(X_i\ X_j) - C(X_i\ X_k) - C(X_j\ X_k)$$

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* See Appendix II for an exposition of the general case.

There is one third-order commonality coefficient for each three-way combination (in this case, it is four).

The fourth-order commonality coefficient, of which there is only one, is given by

$$C(X_1\ X_2\ X_3\ X_4) = R^2(X_1\ X_2\ X_3\ X_4) - R^2(X_1\ X_2\ X_3) - R^2(X_1\ X_2\ X_4) - R^2(X_1\ X_3\ X_4) - R^2(X_2\ X_3\ X_4) - R^2(X_1\ X_2) - R^2(X_1\ X_3) - R^2(X_1\ X_4) - R^2(X_2\ X_3) - R^2(X_2\ X_4) - R^2(X_3\ X_4) - U(X_1) - U(X_2) - U(X_3) - U(X_4)$$

or

the fourth-order coefficient can be verbally described as the squared multiple correlation for all four sets, $R^2(X_1\ X_2\ X_3\ X_4)$, minus the sum of the four third-order commonalities, $C(X_j\ X_k\ X_l)$, minus the sum of the six second-order commonalities, $C(X_j\ X_k)$, minus the sum of the four unique associations

It follows that the squared multiple correlation for the X_4 set can be represented as the sum of its unique association and its different order commonalities, thus

$$R^2(X_4) = C(X_1\ X_2\ X_3\ X_4) + C(X_1\ X_2\ X_4) + C(X_1\ X_3\ X_4) + C(X_2\ X_3\ X_4) + C(X_1\ X_4) + C(X_2\ X_4) + C(X_3\ X_4) + U(X_4)$$

The four sets of variables to be used in these analyses were outlined in section 5.1 of this chapter. In addition to B as a designation for the set of three Student Body Social Background variables, we shall use

T, for the set of seventeen School Personnel and Personnel Expenditure variables

P, for the set of ten Pupil Programs and Policies variables

F, for the set of four Facilities variables.

These measures may be represented in tabular form as follows:

Commonality Coefficients		Sets of Regressor Variables			
		B	T	P	F
First Order	U(B)	XXXX			
	U(T)		XXXX		
	U(P)			XXXX	
	U(F)				XXXX
Second Order	C(BT)	XXXX	XXXX		
	C(BP)	XXXX		XXXX	
	C(BF)	XXXX			XXXX
	C(TP)		XXXX	XXXX	
	C(TF)		XXXX		XXXX
	C(PF)			XXXX	XXXX
Third Order	C(BTP)	XXXX	XXXX	XXXX	
	C(BTF)	XXXX	XXXX		XXXX
	C(BPF)	XXXX		XXXX	XXXX
	C(TPF)		XXXX	XXXX	XXXX
Fourth Order	C(BTPF)	XXXX	XXXX	XXXX	XXXX
R^2 for a single Set of Variables		$R^2(B)$	$R^2(T)$	$R^2(P)$	$R^2(F)$

In the above table the "X's" in the first column represent the unique portion for B, together with the amount of predictable variance that it shares with the other sets of variables. The second-order commonality coefficients show the amount of predictable variance that may be associated with either of the two sets under consideration in each case. The third-order commonality coefficients show the amount of predictable variance that may be associated with any of the three sets, but not the fourth. The fourth-order commonality coefficient, C(BTPF), represents the variance that may be associated with any of the four sets. The unique portions and the commonality coefficient values in each column sum to the squared multiple correlation, R^2, for that set of variables. In the other columns, the commonality coefficients have the same values for the two, three or four sets represented in the parentheses. The tables in the following sections give the four-set commonalities for the different outcome measures.

5.4.2. Regression and Commonality Analyses for Four Sets of Variables

In Section 5.3.2 we attempted to determine how much of the predictable variance in our set of School Outcome measures could be uniquely associated with S or B, and how much was common to the two sets. We found that much of the predictable variance was common to these two sets of variables, particularly for Achievement. We then wondered if there was some subset of the School variables that had more in common with the Student Body Social Background variables than the other sets.

This section, on the other hand, attempts to answer the question: How much of the predictable variance in our measures of School Outcomes can be uniquely apportioned to B, or one of the subsets of S, and how much of it is common to the different combinations of the sets under consideration? Since many of the indices are sparsely represented at the third grade, emphasis will not be given to trends that originate there unless they are in alignment with the trend at the higher grade levels. Commonality values of .01 or less will not be discussed. Negative commonalities will be regarded as equivalent to zero.

Table 5.4.2.1 gives the commonality values for Expectations It will be noticed that, at each grade level, T is the subset of School variables that has the largest unique portion. The unique portion for P shows an increase at grades nine and twelve, while the portion for F has an appreciable value at only the twelfth grade. Inspection of the second-order common-

Table 5.4.2.1. - The Squared Multiple Correlations* of B, T, P, F With Expectations Expressed as a Function of Their Unique Association and Their Commonality Coefficients

Commonality Coefficients†		B	T	P	F	B	T	P	F
First Order	U(B)	19				26			
	U(T)		01				02		
	U(P)			01				01	
	U(F)								
Second Order	C(BT)	03	03			13	13		
	C(BP)	01		01		02		02	
	C(BF)								
	C(TP)								
	C(TF)								
	C(PF)								
Third Order	C(BTP)	01	01	01		04	04	04	
	C(BTF)	01	01		01	01	01		01
	C(BPF)								
	C(TPF)								
Fourth Order	C(BTPF)								
R^2 for a Single Set of Variables		24	06	03	01	46	20	07	01
Grade Level Level		THIRD				SIXTH			

*Rounded to two places of decimals with leading decimal points deleted.

†The squared multiple correlations obtained when all four sets are entered into the regression for the different grade levels are: Third, 26; Sixth, 49; Ninth, 63; Twelfth, 44. The number of schools are: Third, 2453; Sixth, 2372; Ninth, 923; Twelfth, 780.

Table 5.4.2.1. - (Continued)

Commonality Coefficients†		B	T	F	T	B	T	F	T
First Order	U(B)	45				06			
	U(T)		05				12		
	U(P)			03				07	
	U(F)				01				03
Second Order	C(BT)	02	02			09	09		
	C(BP)	02		02		01		01	
	C(BF)	01			01	01			- 01
	C(TP)		03	03			02	02	
	C(TF)						03		03
	C(PF)							02	- 02
Third Order	C(BTP)	01	01	01		-01	-01	-01	
	C(BTF)	02	02		02	03	03		03
	C(BPF)					01		-01	01
	C(TPF)						-01	-01	-01
Fourth Order	C(BTPF)					02	02	02	02
R^2 for a Single Set of Variables		52	12	07	03	20	28	09	08
Grade Level		NINTH				TWELFTH			

alities shows that the largest amounts of predictable variance are shared in common by B and T. There are slight second-order commonality values at grades nine and twelve for T and P, and at grades six and nine for B and P. A slight value for P and F is found at grade twelve only. Both the third-order and the fourth-order commonality coefficients are for the most part negligible. The squared multiple correlations for each individual set of variables indicate that B and T yield the greatest predictive power. These trends taken together suggest that B may play the greatest role in the development of Expectations, while at the higher grade levels the Student Body variables may come to share this role by virtue of their relationship or shared variance with T. At the higher grade levels, both P and F may also play roles.

Table 5.4.2.2 gives the four-set commonalities for Attitude Toward Life. Inspection of the unique portions for the different grade levels shows that B has the largest value, while T and P increase very slightly at grades nine and twelve. The second-order commonalities show that most of the predictable variance in Attitude Toward Life is common to B and T. The other second-order commonalities do not show any clear trends. There is some slight variance in B and P at the ninth grade, and in P and F at the twelfth grade. Those third-order commonality coefficients that involve B and T (viz. BTP and BTF) show that at grades nine and twelve there is an increase in the amount of predictable variance shared by all four sets of variables. The squared multiple correlations are greatest for B and T, but increase for the other sets at the higher grade levels. Taken together, these trends suggest that B may be more important in the development of Attitude Toward Life, but that T may come to share in this role at the higher grade levels. If other aspects of the school such as F and P are found to play a role, it is only through their sharing of variance with B and P.

The four-set commonalities for Educational Plans and Desires are given in Table 5.4.2.3. Inspection of the unique portions for the different grade levels shows that B has the largest values, but that the unique

Table 5.4.2.2. - Squared Multiple Correlations* of B, T, P and F With Attitude Toward Life Expressed as a Function of Their Unique Association and Their Commonality Coefficients

Commonality Coefficients†		B	T	P	F	B	T	P	F
First Order	U(B)	18				29			
	U(T)		04				01		
	U(P)			01					
	U(F)								
Second Order	C(BT)	01	01			20	20		
	C(BP)					01	01		
	C(BF)								
	C(TP)								
	C(TF)								
	C(PF)								
Third Order	C(BTP)	01	01	01		05	05	05	
	C(BTF)					02	02		02
	C(BPF)								
	C(TPF)								
Fourth Order	C(BTFP)								
R^2 for a Single Set of Variables		22	06	04	01	57	28	06	02
Grade Level		THIRD				SIXTH			

*Rounded to two places of decimals with leading decimal points deleted.

†The squared multiple correlations obtained when all four sets are entered into the regression for the different grade levels are: Third, 27; Sixth, 58; Ninth, 64; Twelfth, 56. The number of schools are: 2,453; Sixth, 2,372; Ninth, 923; Twelfth, 780.

Table 5.4.2.2. - (continued)

Commonality Coefficients †		B	T	P	F	B	T	P	F
First Order	U(B)	29				14			
	U(T)		01				03		
	U(P)			01				01	
	U(F)				01				01
Second Order	C(BT)	17	17			22	22		
	C(BP)	02		02					
	C(BF)								
	C(TP)								
	C(TF)								
	C(PF)			01	01			02	02
Third Order	C(BTP)	05	05	05		06	06	06	
	C(BTF)	02	02		02	04	04		04
	C(BPF)	02		02	02				
	C(TPF)		01	01	01				
Fourth Order	C(BTFP)	03	03	03	03	03	03	03	03
R^2 for a Single Set of Variables		58	29	15	08	48	38	12	09
Grade Level		NINTH				TWELFTH			

Table 5.4.2.3. - Squared Multiple Correlations* of B, T, P and F With Educational Plans and Desires Expressed as a Function of Their Unique Association and Their Commonality Coefficients

Commonality Coefficients†		B	T	P	F	B	T	P	F
First Order	U(B)	07				19			
	U(T)		02				01		
	U(P)			01				01	
	U(F)								
Second Order	C(BT)	08	08			21	21		
	C(BP)					01		01	
	C(BF)								
	C(TP)								
	C(TF)								
	C(PF)								
Third Order	C(BTP)	03	03	03		07	07	07	
	C(BTF)					01	01		01
	C(BPF)								
	C(TPF)								
Fourth Order	C(BTPF)								
R^2 for a Single Set of Variables		19	13	04	01	50	31	09	01
Grade Level			THIRD				SIXTH		

*Rounded to two places of decimals, with leading decimal points deleted.

†The squared multiple correlations obtained when all four sets are entered into the regression for the different grade levels are: Third, 21; Sixth, 52; Ninth, 67; Twelfth, 61. The number of schools are: Third, 2,453; Sixth, 2,372; Ninth, 923; Twelfth, 780.

Table 5.4.2.3. - (continued)

Commonality Coefficients†		B	T	P	F	B	T	P	F
First Order	U(B)	35				19			
	U(T)		03				09		
	U(P)			01				03	
	U(F)				01				01
Second	C(BT)	14	14			20	20		
	C(BP)	01		01		02		02	
	C(BF)	01			01				
	C(TP)						- 01	- 01	
	C(TF)		01		01		02		02
	C(PF)								
Third Order	C(BTP)	08	08	08		03	03	03	
	C(BTF)	02	02		02	02	02		02
	C(BPF)	01		01	01				
	C(TPF)						01	01	01
Fourth Order	C(BTPF)	- 01	- 01	- 01	- 01	01	01	01	01
R^2 for a Single Set of Variables		61	28	10	04	47	37	10	06
Grade Level			NINTH				TWELFTH		

portions for T increase at the higher grade levels. At grade twelve there is an appreciable unique portion of P. The second-order commonality coefficients are largest for B and T. However, none of the other second-order commonalities have appreciable values or show a clear trend. For the individual sets of variables, the squared multiple correlations are greatest for B and T; for the higher grade levels, P remains relatively stable, while F shows a slight increase. It seems that B may be most important in the development of Educational Plans and Desires, but that T may also make a contribution.

Table 5.4.2.4 gives the four-set commonalities for Study Habits. The unique portions show that by far the greatest independent contribution to the prediction of Study Habits is from B. The only second-order commonality coefficient that shows an appreciable value is C(BT). The trend is for B, T, and P to share less of the predictable variance as one ascends the grade levels. All four sets of variables come to share some of the common variance at the ninth and twelfth grades, as can be seen from the fourth-order commonalities. The relative magnitudes of the squared multiple correlations for the individual sets remain roughly similar. These trends suggest that B comes to play an increasingly greater role in the development of Study Habits, and that this role is shared less and less by T.

Four-set commonality analyses for Achievement are given in Table 5.4.2.5. Inspection of the unique portions in this table shows that B makes a slightly greater independent contribution to the predictability of Achievement at the higher grade levels, but tapers off at the twelfth grade. A diminishing role is played by T at the higher grade levels. The fact that the unique portion is so high at the lower grade levels is somewhat puzzling until one observes that the second order commonality coefficient, C(BT), increases for the higher grade levels. This suggests that T comes to share more of the predictable variance in Achievement at the higher grade levels instead of making an independent contribution. The remaining second-order commonalities are negligible in magnitude. The variables we have called F, with P and B, share an increasing

Table 5.4.2.4. - Squared Multiple Correlations* of B, T, P, and F With Study Habits, Expressed as a Function of Their Unique Association and Their Commonality Coefficients

Commonality Coefficients†		B	T	P	F	B	T	P	F
First Order	U(B)	17				31			
	U(T)		01				01		
	U(P)			01				01	
	U(F)								
Second Order	C(BT)	22	22			19	19		
	C(BP)	01		01		01		01	
	C(BF)								
	C(TP)		01	01					
	C(TF)								
	C(PF)								
Third Order	C(BTP)	07	07	07		05	05	05	
	C(BTF)	01	01		01	01	01		01
	C(BPF)								
	C(TPF)								
Fourth Order	C(BTPF)								
R^2 for a Single Set of Variables		49	34	11	02	57	26	07	01
Grade Level		THIRD				SIXTH			

*Rounded to two places of decimals, with leading decimal points deleted.

†The squared multiple correlations obtained when all four sets are entered into the regression for the different grade levels are: Third, 53; Sixth, 60; Ninth, 78; Twelfth, 56. The number of schools are: Third, 2,453; Sixth, 2,372; Ninth, 923; Twelfth, 780.

Table 5.4.2.4. - (continued)

Commonality Coefficients†		B	T	P	F	B	T	P	F
First Order	U(B)	58				40			
	U(T)		02				08		
	U(P)			01				03	
	U(F)								04
Second Order	C(BT)	08	08						
	C(BP)	01		01		-01		-01	
	C(BF)					-01			-01
	C(TP)						01	01	
	C(TF)								
	C(PF)							-01	-01
Third Order	C(BTP)	03	03	03		02	02	02	
	C(BTF)	01	01		01	-01	-01		-01
	C(BPF)	01		01	01	01		01	01
	C(TPF)						-02	-02	-02
Fourth Order	C(BTPF)	02	02	02	02	02	02	02	02
R^2 for a Single Set of Variables		74	16	08	05	42	11	06	03
Grade Level			NINTH				TWELFTH		

Table 5.4.2.5. - Squared Multiple Correlations* of B, T, P, and F With Achievement, Expressed as a Function of Their Unique Association and Their Commonality Coefficients

Commonality Coefficients†		B	T	P	F	B	T	P	F
First Order	U(B)	05				07			
	U(T)		06				03		
	U(P)			02					
	U(F)								
Second Order	C(BT)	28	28			35	35		
	C(BP)					01		01	
	C(BF)								
	C(TP)								
	C(TF)								
	C(PF)								
Third Order	C(BTP)	07	07	07		08	08	08	
	C(BTF)	02	01		01	02	02		02
	C(BPF)								
	C(TPF)								
Fourth Order	C(BTPF)	01	01	01	01				
R^2 for a Single Set of Variables		43	43	11	02	53	48	09	02
Grade Level			FIRST				THIRD		

*Rounded to two places of decimals, with leading decimal points deleted.

†The squared multiple correlations obtained when all four sets are entered into the regression for the different grade levels are: First, 52; Third, 56; Sixth, 83; Ninth, 87; Twelfth, 86. The number of schools are: First, 1,302; Third, 2,453; Sixth, 2,372; Ninth, 923; Twelfth, 780.

Table 5.4.2.5. - (continued)

Commonality Coefficients†		B	T	P	F	B	T	P	F	B	T	P	F
First Order	U(B)	10				11				08			
	U(T)		03				02				02		
	U(P)			01				01				02	
	U(F)												
Second Order	C(BT)	55	55			49	49			45	45		
	C(BP)					01		01		01		01	
	C(BF)												
	C(TP)		01	01			01	01					
	C(TF)												
	C(PF)												
Third Order	C(BTP)	12	12	12		12	12	12		07	07	07	
	C(BTF)												
	C(BPF)	02	02		02	03	03		03	17	17		17
	C(TPF)					01		01	01	01		01	01
Fourth Order	C(BTPF)					06	06	06	06	04	04	04	04
R^2 for a Single Set of Variables		79	72	14	02	82	72	22	10	82	74	14	22
Grade Level		SIXTH				NINTH				TWELFTH			

amount of variance at the ninth and twelfth grades. Similarly, all four sets of variables come to share an appreciable portion of the predictable variance at grades nine and twelve. The squared multiple correlations for the individual sets increase in absolute value at the higher grade levels. The relative ordering, however, is for B to be slightly to appreciably larger than T, and for T to be larger than F -- until the twelfth grade. These results suggest that B and T may play an important role in the development of Achievement. If P and F play a role, it would be by virtue of their shared variances with B and T.

Table 5.4.2.6 gives the squared multiple correlations and commonality coefficients for B, T, P, and F with Percent Going on to College or to Post Secondary Vocational Training and Percent of Dropouts. Inspection of Table 5.4.2.6 shows that the fourth-order commonality coefficients are near zero for each of the dependent variables. The second noteworthy aspect of this table is that the differences in the commonality coefficients for Percent Going on to College seem to resemble those of Achievement. Unlike Achievement however, T has a larger unique portion than B. These results show that the greatest independent contribution to the Percent Going to College is made by T. In addition, B makes an independent contribution, as well as sharing variance with T.*

The remaining variables have in common that at least one, and usually more than one, of the sets of School variables have a greater unique portion than B. For Percent of Non-White Going on to College all three sets of School variables have low-to-moderate unique portions. The higher-order commonality coefficients are vanishingly small, except for the second-order commonality, C(TPF), for School Personnel, Pupil Programs and Facilities. In similar fashion, the three sets of School variables have low-to-moderate unique portions for Percent Going on to Post-Secondary Vocational Training. The second- and third-order commonalities are negligible except for T and P.

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* See below, p. 122 , for the specific school personnel variables related to Percent Going on to College.

Table 5.4.2.6. - Squared Multiple Correlations* of T, P, and F With the Twelfth-Grade Outcome Measures, Expressed as a Function of Their Unique Association and Their Commonality Coefficients

Commonality Coefficients†		B	T	P	F	B	T	P	F
First Order	U(B)	06				03			
	U(T)		12				08		
	U(P)			01				04	
	U(F)				01				03
Second Order	C(BT)	21	21			-01	-01		
	C(BP)					01		01	
	C(BF)					01			01
	C(TP)		03	03			02	02	
	C(TF)		02		02		01		01
	C(PF)								
Third Order	C(BTP)	03	03						
	C(BTF)	06	06		06	01	01		01
	C(BPF)					01		01	01
	C(TPF)						02	02	02
Fourth Order	C(BTPF)	01	01	01	01				
R^2 for a Single Set of Variables		38	49	09	11	05	11	08	07
Dependent Variable		Percent Going on to College				Percent Non-White Going on to College			

*Rounded to two places of decimals, with leading decimal points deleted.

†The squared multiple correlations obtained when all four sets are entered into regression are: Percent Going to College, 57; Percent Non-White Going to College, 23; Percent Going on to Vocational Training, 27; Percent Non-White Going on to Vocational Training, 24; Percent Boy Dropouts, 34; 780 schools were included in these analyses.

Table 5.4.2.6. - (continued)

Commonality Coefficients		B	T	P	F	B	T	P	F	B	T	P	F
First Order	U(B)	01				02				03			
	U(T)		05				07				14		
	U(P)			13				08				05	
	U(F)				04				04				01
Second Order	C(BT)	01	01			01	01			04	04		
	C(BP)									02		02	
	C(BF)												
	C(TP)		02	02			03	03			01	01	
	C(TF)		01		01		01		01				
	C(PF)			-02	-02			-01	-01			01	01
Third Order	C(BTP)	-01	-01	-01						03	03	03	
	C(BTF)	01	01		01	02	02		02				
	C(BPF)					01		01	01				
	C(TPF)		03	03	03						03	03	03
Fourth Order	C(BTPF)												
R^2 for a Single Set of Variables		02	11	14	06	05	11	10	05	10	25	12	04
Dependent Variable		Percent Going on to Vocational Training				Percent Non-White Going on to Vocational Training				Percent of Boys Who Drop Out			

A somewhat similar trend can be noted for Percent of Boy Dropouts. The largest unique portion belongs to T, while P has a value that is about one-third of School Personnel. In addition, the Student Body variables have a value that is about half of the Pupil Programs unique portion. The only appreciable second-order commonality involves B and T.

It may be objected that these results are due merely to the groupings of variables that were used. Recognizing that there may be some validity to this argument, we saw that analyses for the two-set case of School and Student Body variables were presented first. We felt that agreement could be reached more readily on a classification of variables into School and Student Body indices. It appears, then, that the use of subsets of School variables is a special case of the more general two-set case, and that any arbitrary division of the set of School variables would not alter the results obtained for this general case. Factor analyses* were also conducted on these variables at the different grade levels in order to see if they formed any meaningful groupings. Most of them did not.

5.5. Possible Causal Inferences

In this chapter we attempted to determine the relative roles of student characteristics and school characteristics as they relate to different school outcomes such as Achievement. A set of Student Body Social Background variables (B) was selected. So were a comprehensive set of thirty-one School variables (S) and a set of outcome variables.

Before regressions were computed the intercorrelations of the outcome measures were inspected as well as their correlations with B, and the multiple correlations of S with each of them. These correlations showed that both B and S were moderately to highly correlated with the Outcome measures, as well as with one another. We inferred from this that when the schools were equated for the kinds of students they got initially, there would be very few differences left that could be related to S. Calculation of the regressions showed that this was so, and that the percent of variance in most of the Outcome measures associated with S that was independent of B was relatively small, except for Achievement. In the case of Achievement, the percent of variance in the Outcome measures that was independently associated with either B or S was small. This confirmed what we had found earlier by inspecting the intercorrelations, namely that a high degree of correlation existed between B and S as they related to most of the different outcome measures.

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* I.e. Principal Components analyses and Varimax rotations.

In view of these results the special technique was developed that we have labeled "commonality analysis." Regression and commonality analyses were conducted for two and four sets of variables. These analyses were conducted in order to obtain answers to the question: How much of the predictable variance in our measures of School Outcomes can be uniquely apportioned to each set of variables, and how much is common to the different combinations of the sets under consideration? For the two-set case, S and B were used. For the four-set case, B, T, P and F were used. A summary of the resultant analyses is given below.

To make causal inferences from such associational data it is necessary to make certain assumptions concerning the meaning of results obtained from a commonality analysis. It does not seem unreasonable to assume that some degree of proportionality exists between the percent of variance of a dependent variable that can be uniquely associated with a set of variables and its causal influence. This possible influence will be called an "independent role" or "independent contribution".

It is not as easy, however, to assign some causal interpretation to the common portions of variance. In one sense this shared variance between two or more sets of variables represents an indeterminate situation; we simply cannot tell to which of the sets the variance should be apportioned nor the extent to which these might represent certain kinds of joint occurrences.

For example, schools with a high incidence of disciplinary problems may have certain kinds of policies for handling these problems, whereas schools with a low incidence of such problems may not need a formal disciplinary system for handling them. This is not to say that these are necessary joint occurrences, but only that they may be found together in schools as they have developed up to this point in time.

The following inferences are organized around the different outcome measures.

Expectations for Excellence. The Student Body and School variables were both found to play increasingly large independent roles in Expectations at the higher grade levels. Up to the twelfth grade, the Student Body variables play a much greater role than the School variables. At the twelfth grade, however, there occurs a sharp reversal in their relative roles: the School variables now make a much greater contribution than the Student Body variables. Of the School variables, those that play an increasingly greater role at the higher grade levels are the ones we have called T, P and F.

Attitude Toward Life. The independent role of the Student Body variables in Attitude Toward Life increases at the higher grade levels and then drops off slightly at grade twelve. The independent role of the School variables shows a progressive increase from grade six on. The measure of overlap increases at the higher grade levels. This suggests that the longer the Student Body and School variables are associated with one another as part of the educational process, the more their common role in the development of Attitudes Toward Life tends to increase.

Educational Plans and Desires. The Student Body variables play a greater independent role in the development of Educational Plans and Desires than do the School variables. However, the School variables play an increasingly greater independent role at the higher grades. The measure of overlap suggests that the Student Body and School variables have a common role in the development of Educational Plans and Desires. The School Personnel variables play an increasingly greater independent role at the higher grade levels, as well as a common role with the Student Body variables. The Pupil Programs have a common role in combination with the Student Body and School variables.

Study Habits. The Student Body variables play an increasingly greater independent role in the development of Study Habits at the higher grade levels. The School variables also play a greater independent role at the higher grade levels, but their relative contribution is much less than for the Student Body variables. The progressive decline in the magnitude of the measure of overlap at the higher grade levels suggests that, at the higher grade levels, the Student Body and School variables may have increasingly less of a common role in influencing Study Habits. The three subsets of School variables show a slight increase in their independent role at the higher grade levels. However, the common role of the School Personnel and Student Body variables diminishes at the higher grade levels, as does their common role with the Pupil Program and Policy variables.

Achievement. The independent role of the School variables in Achievement is greater than for the Student Body variables at the first grade. However, at the third grade these roles are reversed. From the third grade on the Student Body variables play a greater independent role than the School variables. The measure of overlap shows a progressive increase from the first through the twelfth grades. At the higher grades most of the predictable variance in Achievement is shared with the Student Body and School variables. None of the subsets of School variables play much of an independent role at the higher grade levels. In fact the School Personnel set shows a diminishing independent role at the higher grade levels. The School Personnel variables have a large common role with the Student Body variables. This may have an influence on Achievement. Likewise, the Pupil Programs and Facilities may be making a contribution through their common role with the Student Body and School Personnel variables. These trends, juxtaposed with other considerations, suggest that white students and students from higher socio-economic strata acquire more knowledge from their school experiences than do non-white students or students from lower socio-economic strata. Moreover, the schools appear to play a role in influencing these differences.

This line of reasoning is supported, in part, by Tables 5.2.1 and 5.3.2.1, which show that the intercorrelations of the Student Body variables are fairly similar for all grade levels. These tables also show that the multiple correlations of the School variables with each of the Student Body variables are fairly similar. However, the correlations of the Student Body and School variables with Achievement increase for the higher grade levels.

We also know from other analyses that when the achievement curves of white students are compared with those of non-white students they show an initial gap, and that this gap increases at the higher grade levels (Coleman, et. al. 1966; Okada, et. al., Technical Notes 53 and 54). Still other analyses following up the same students over time have shown that, after students had been equated for initial ability, high SES students learned more than low SES students (Shaycoft, 1967). Table 4.2 also showed that there is a pronounced tendency for students of similar racial and socio-economic backgrounds to go to school with one another. This aggregation of similar kinds of students into the same schools masks the differences that exist among students within each school, and therefore makes the school averages more predictable. This greater predictability results in the high correlations that can be observed between such variables as Socio-Economic Status, Racial-Ethnic Composition and Achievement. Part of this increase in correlation with Achievement for the higher grade levels is attributable to the influence of the schools.

Twelfth Grade Outcome Measures. For the remaining outcome measures the School variables make a much larger independent contribution than do the Student Body variables. Indeed, the role of the Student Body variables is often negligible. The School Personnel variables have a relatively large independent and common role, primarily with the Student Body variables, but also with the Pupil Program and Facilities variables. The Student Body variables play an independent as well as a common role in Percent Going to College. It appears, however, that the School Personnel set of variables may play the largest role in influencing Percent Going to College.

For the remaining variables each of the three subsets of School variables* plays a greater independent role than the Student Body variables. There is very little of a common role for these variables except for the School Personnel and Pupil Program sets. For the most part, the three sets of school variables tend to contribute independently of one another. For Dropouts, however, there is a slight common role for the Student Body and School Personnel variables with the Facilities and Pupil Programs variables, respectively.

SUMMARY

We have seen that the Student Body Social Background variables may play a moderate-to-large role in influencing Expectations for Excellence, Attitude Toward Life, Educational Plans and Desires and Study Habits. The School variables also play a role, but not nearly as large a one as the Student Body variables. We have also seen that a certain amount of variance is shared by these two sets of variables and that the extent of this sharing varies with the grade level and the school outcome under consideration.

For Achievement we have seen that the Student Body and School variables each play relatively small independent roles. But there is a dramatic confounding and perhaps interplay of these variables. These results suggest that the kinds of students a school gets initially, as well as its resources, play a role in influencing School outcomes. It is suggested that for all of the outcome measures the school fosters more learning and motivation in white students and students from the higher socio-economic strata.

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* With the exception of Facilities for Dropouts.

For the remaining outcome measures the school variables play a much greater independent role than the student body variables. Perhaps by the time students reach the twelfth grade the school has more of an influence than at the lower grade levels. The next chapter will present partial correlations of the school variables with these outcome measures in an attempt to pinpoint the specific kinds of variables that might have a causal influence.

6. PARTIAL CORRELATIONS OF SELECTED SCHOOL DESCRIPTIVE VARIABLES WITH OUTCOME MEASURES

This chapter presents a series of partial correlations in summary form.* The partial correlations in question are those of the different outcome measures with the individual regressor variables, after certain other correlations had been eliminated.† They are presented in order to show what kinds of variables are related to the various outcome measures and to what extent. The advantage of partial correlations for this purpose is that they are more readily interpretable than regression coefficients because their magnitude and sign depend only upon the few variables that have been partialed out. In addition, they are often the desired end product of an analysis. The reason for this is that they describe a number of different relationships between the regressor and dependent variables that can be utilized after the association attributable to some other variable has been removed.‡ Finally, partial correlations can give the reader a view of the data that differs somewhat from the one afforded by regression analyses.

The summary tables are organized by the various outcome measures for each grade level. Each table was developed from the relevant series of detailed tables in Appendix XI, where separate treatment is given to the effects at each stage of partialing out first Size, then Home Background, and finally Racial-Ethnic Composition. The tables in Appendix XI also show the zero-order correlations (when no other variables are partialed out), and the squared multiple correlations of the variables partialed out with the dependent variable, for each grade level. These results are summarized here by the device of using an "X" to represent variables that had a residual or partial correlation of .09 or greater,* after Size, Home Background, and Racial-Ethnic Composition had been partialed out. The value of .09 was chosen because each variable presented with the use of this cutoff had about one percent of the residual variance associated with it (that is, about .09 squared).

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* For the tables on which these summary tables are based, see Appendix XI.

† The correlations eliminated were those attributable to school Size (i.e. number of students), Student Body's Socio-Economic Status, Racial-Ethnic Composition, and Family Structure. These variables are described in Chapter 4.

‡ See McNemar, 1955 for an excellent introduction to partial correlation techniques.

A word of caution may be appropriate here. It can be expressed in the form of an example. At the ninth grade about 36 percent of the total variance in Achievement is associated with the schools (see Table 4.2). Of this 36 percent, 82 percent is accounted for by partialing out Size, Home Background and Racial-Ethnic Composition (see Appendix XI). The remainder -- a mere 18 percent -- can be explained by other variables. Now this 18 percent of the 36 percent becomes the base from which we are working when we look at the partial correlations that remain after Size, Home Background and Racial-Ethnic Composition have been partialed out. As the following calculations show, one percent of this remaining variance -- our cutoff point -- is indeed a very small fraction of the variance associated with the schools, let alone of the total Achievement variance.

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* I.e., greater in absolute value.

Total Achievement variance associated with the schools = .36

Unexplained school Achievement variance, i.e. the total Achievement variance associated with the schools that is left unexplained after partialing out Size, Home Background and Racial-Ethnic Composition = 1 - .82 = .18

Proportion of unexplained school Achievement variance that is associated with one variable is at least one percent (viz. .09 squared) = .01

Proportion of unexplained school Achievement variance that is accounted for by a single variable having a partial correlation of .09 = .18 X .01 = .0018

Proportion of Total Achievement variance that is accounted for by a single variable having a partial correlation of .09 with the unexplained school Achievement variance = .0018 X .36 = .000648, or approximately .001.

Hence it can be seen that even though a variable can have what appears to be a relatively large partial correlation, the actual proportion of variance in a school Outcome measure that it can account for can be very small. The amount of Total variance it can account for may be even smaller.

6.1. Partial Correlations of Student Body's Expectations for Excellence

It will be seen from Table 6.1.1 that after Size, Student Body Home Background and Racial-Ethnic composition had been partialed out, the following variables maintained a residual correlation for two or more grade levels:

Table 6.1.1. - Partial Correlations With Expectations for Excellence*

	Grade Levels				
List of Variables	12	9	6	3	Total X's
Daily Attendance					0
Teaching Conditions		X			1
Teacher's Racial-Ethnic Group Membership	(-)X	X			2
Contextual Vocabulary Score	(-)X	(-)X			2
Percent of White Students at Teacher's Undergraduate Institution		(-)X			1
Percent White of Teacher's Students	X	X			2
Student Body's Educational Plans and Desires	X	X	X		3
Student Body's Study Habits	X	X	X	X	4
Student Body's Attitude Toward Life	X	X	X	X	4
Student Body's Achievement Level		(-)X		X	2
Proportion of Females in the Student Body		X	X	X	3
Parents Speak a Foreign Language at Home	X	X	(-)X	X	4
Student Speaks a Foreign Language Outside of School	X	X		X	3
Kindergarten Attendance	X	X	X	X	4
Nursery School Attendance			X	X	2
Total X's	9	13	7	8	37

* After partialing out School Size, Student Body's Home Background, and Student Body's Racial-Ethnic Composition.

Teacher's Racial-Ethnic Group Membership (negatively at grade twelve), Contextual Vocabulary Score (slightly negative), and Percent of White Students in Class
Student Body's Educational Plans, Study Habits, Attitude Toward Life, and Achievement Level (with a sign reversal at grade nine)
Proportion of Females in Student Body, whether Parents Speak a Foreign Language at Home or Student Speaks a Foreign Language Outside of School, and Kindergarten Attendance (i.e. the proportion of children in the student body who attended kindergarten and nursery school)

The sign reversal at the twelfth grade for Teacher's Racial-Ethnic Membership may reflect a change that is associated with non-white teachers. Perhaps non-white teachers at the twelfth grade have a different kind of student (e.g., they have lost the dropouts). The reason for the sign reversal on the Teacher's Vocabulary Score is not so easy to suggest. Perhaps lower-scoring teachers tend to produce unrealistically high Expectations. The sign reversal for Achievement may be due to the different variables used to represent these indices at the different grade levels. There is no ready explanation for the sign reversal for English (as opposed to some other language) spoken at home.

6.2. Partial Correlations of Student Body's Attitude Toward Life

The variables in Table 6.2.1 that maintained a residual relationship for two or more grade levels were:
Pupils Per Room (negatively, indicating more favorable attitudes for fewer pupils per room)
Student Body's Expectations, Educational Plans, Study Habits, and Achievement Level
Proportion of Females in Student Body and proportion of students who speak English (as opposed to some other language) outside of school and at home
Kindergarten Attendance, and Frequency of Parents' PTA Attendance (as reported by the child)

Table 6.2.1. - Partial Correlations With Attitude Toward Life*

List of Variables	Grade Levels				Total X's
	12	9	6	3	
Pupil-Teacher Ratio	(-)X				1
Pupils Per Room	(-)X	(-)X			2
Compulsory Attendance Law					0
Daily Attendance	X				1
Teaching Conditions			(-)X		1
Teacher's Preference for Student Ability Level	X				1
Teacher's Racial-Ethnic Group Membership				(-)X	1
Contextual Vocabulary Score					0
Percent of White Students at Teacher's Undergraduate Institution				(-)X	1
Percent White of Teacher's Students		(-)X			1
Student Body's Expectations for Excellence		X	X	X	3
Student Body's Educational Plans and Desires	X	X	X	X	4
Student Body's Study Habits	X	X	X	X	4
Student Body's Achievement Level	X	X	X		3
Proportion of Females in the Student Body			X	X	2
Parents Speak a Foreign Language at Home	X	X		X	3
Student Speaks a Foreign Language Outside of School	X	X		X	3
Kindergarten Attendance		X	X		2
Nursery School Attendance			X	X	2
Frequency of Parents' PTA Attendance	X	X			2
Total X's	10	10	8	9	37

* See footnote to Table 6.1.1.

6.3. Partial Correlations of Student Body's Educational Plans and Desires

Only those variables that appeared at two or more grade levels are discussed in this section. As can be seen from Table 6.3.1, these variables are:

Specialized Staff and Services (with a slight negative value)
Percent of Students in Daily Attendance
Teaching Conditions (i.e., the teachers' view of the student body as to how much effort they put forth, school problems, etc.)
Student Body's Expectations, Study Habits, Attitude Toward Life, and Achievement Level
Proportion of Females in the Student Body (with a sign reversal at the twelfth grade)
Nursery School Attendance

The negative sign for Specialized Staff and Services may indicate that, although the student body requires specialized staff (remedial reading and math teachers, etc.), and although these specialists may produce more Achievement (see Table 6.5.1), the students may have fewer plans to continue on in school. The sign reversal for Proportion of Females at the twelfth grade is not readily explained.

6.4. Partial Correlations of Student Body's Study Habits

It will be seen from Table 6.4.1 that the following regressor variables retained a residual relationship of .09 or greater at two or more grade levels:

Student Body's Expectations, Educational Plans, Attitude Toward Life, and Achievement Level (with a sign reversal at grade twelve)
Proportion of Females in Student Body and proportion of students who speak English as opposed to some other language
Kindergarten and Nursery School Attendance, and Parents' PTA Attendance (as reported by the student)

Table 6.3.1. - Partial Correlations With Educational Plans and Desires*

	Grade Levels				
List of Variables	12	9	6	3	Total X's
Specialized Staff and Services	(-)X	(-)X			2
Principal's Estimate of the School's Reputation					0
Daily Attendance	X	X			2
Teaching Conditions	X	X			2
Teacher's Socio-Economic Background	(-)X				1
Teacher's Preference for Student Ability Level	X				1
Teacher's Racial-Ethnic Group Membership					0
Contextual Vocabulary Score	(-)X				1
Percent of White Students at Teacher's Undergraduate Institution					0
Percent White of Teacher's Students					0
Student Body's Expectation for Excellence	X	X	X	X	4
Student Body's Study Habits	X	X	X	X	4
Student Body's Attitude Toward Life	X	X	X	X	4
Student Body's Achievement Level	X	X	X	X	4
Proportion of Females in the Student Body	(-)X		X	X	3
Parent's Speak a Foreign Language at Home				X	1
Student Speaks a Foreign Language Outside of School				X	1
Kindergarten Attendance	(-)X			X	2
Nursery School Attendance			X	X	2
Total X's	12	7	6	9	34

* See footnote to Table 6.1.1.

Table 6.4.1. - Partial Correlations With Study Habits*

		Grade Levels			
List of Variables	12	9	6	3	Total X's
Compulsory Attendance Law				X	1
Daily Attendance	X				1
Teaching Conditions					0
Teacher's Preference for Student Ability					0
Teacher's Racial-Ethnic Group Membership				X	1
Contextual Vocabulary Score				X	1
Percent of White Students at Teacher's Undergraduate Institution				X	1
Percent White of Teacher's Students	(-)X				1
Student Body's Expectations for Excellence	X	X	X	X	4
Student Body's Educational Plans and Desires	X	X	X	X	4
Student Body's Attitude Toward Life	X	X	X	X	4
Student Body's Achievement Level	(-)X		X	X	3
Proportion of Females in the Student Body	X	X	X	X	4
Parents Speak a Foreign Language at Home	X	X		X	3
Student Speaks a Foreign Language Outside of School	X	X		X	3
Kindergarten Attendance		X		X	3
Nursery School Attendance			X	X	2
Frequency of Parents' PTA Attendance	X	X			2
Total X's	9	9	6	13	37

* See footnote to Table 6.1.1.

The sign reversal for Achievement at the twelfth grade may indicate that the lower-achieving students who remain in school (as opposed to the dropouts) report more studious habits than do the higher-achieving students.* This line of reasoning is supported by the fact that Achievement is negatively related to the Percent of Dropouts (see Appendix XI).

6.5. Partial Correlations of School Achievement Levels

Table 6.5.1 shows that the following variables maintained a residual relationship for two or more grade levels:
Specialized Staff and Services, Pupil Teacher Ratio, (negatively, indicating higher achievement levels for fewer pupils per teacher), Teacher Exams, or the use of teacher examinations in the appointment process (also negatively), and the enforcement of a Compulsory Attendance Law
Teaching Conditions, Teacher's Racial-Ethnic Group Membership, Annual Teaching Salary, Contextual Vocabulary Score, and College Attended
Percent of White Students at Teacher's Undergraduate Institution, and Percent of White Students in Teacher's Class (with a sign reversal at the twelfth grade)
Student Body's Attitude Toward Life, Proportion of Females in Student Body (negatively, indicating higher achievement levels for a higher proportion of males), Kindergarten Attendance, and the proportion of students whose parents speak English at home (negatively)

The negative sign for Teacher Exams may indicate that it is the schools with lower-achieving students that use teacher exams in the appointment process in order to keep out unfit teachers. Or it may be that those teachers who are best able to produce achievement in their students are in such demand that they do not have to subject themselves to an examination procedure. The reason for the sign reversal in Percent of White Students in Teacher's Class is not readily apparent. The same is true of Parents Speak a Foreign Language at Home. The sign reversal for Study Habits may reflect in part the influence of the dropouts (see p. 187).

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* This would require that similar kinds of students be aggregated in schools with one another -- as, indeed, has been shown to be the case (see Table 4.2).

Table 6.5.1. - Partial Correlations With Achievement*

		Grade Levels				
List of Variables	12	9	6	3	1	Total X's
Specialized Staff and Services	X	X	X	X	X	5
Availability of Texts						0
Pupil Teacher Ratio		(-)X	(-)X			2
Principal's Estimate of the School's Reputation						0
Teacher Exams			(-)X		(-)X	2
Principal's Estimate of School Problems						0
Compulsory Attendance Law	X	X				2
Pupil Assignment					X	1
Daily Attendance				X		1
Teaching Conditions	X	X	X	X	X	5
Teacher's Socio-Economic Background						0
Teacher's College Attended		X	X			2
Teaching Related Activities						0
Teacher's Preference for Student Ability Level						0
Teacher's Racial-Ethnic Group Membership		X	X			2

Table 6.5.1. - (continued)

		Grade Levels				
List of Variables	12	9	6	3	1	Total X's
Annual Teaching Salary	X	X	X		X	4
Contextual Vocabulary Score		X	X	X	X	4
Percent of White Students at Teacher's Undergraduate Institution		X	X			2
Percent White of Teacher's Students		(-)X			X	2
Student Body's Expectations for Excellence		(-)X				1
Student Body's Educational Plans and Desires	X	X	X	X		4
Student Body's Study Habits	(-)X		X	X		3
Student Body's Attitude Toward Life	X	X	X			3
Proportion of Females in the Student Body	(-)X	(-)X				2
Parents Speak a Foreign Language at Home	(-)X	(-)X				2
Student Speaks a Foreign Language Outside of School		(-)X	X			2
Kindergarten Attendance	X	X	X	X	X	5
Total X's	10	17	14	7	8	56

* See footnote to Table 6.1.1.

6.6. Partial Correlations for the Special Twelfth Grade Outcome Measures

The partial correlations for the special twelfth-grade outcome measures -- Percent of Twelfth Grade Graduates Going on to a Two- or Four-Year College, Percent of Twelfth Grade Graduates Going on to Post Secondary Vocational Training, and Percent of Boy Dropouts * -- are given in Appendix XI. Here, instead of a single summary table, each set of results will be summarized separately.

The partial correlations for Percent of Twelfth Grade Graduates Going on to a Two-or Four-College showed that the following regressor variables retained a residual relationship:
Plant and Physical Facilities, Number of Hours Homework Expected Per Day, and Percent of Boy Dropouts (negatively, indicating that schools with a higher percent of students going on to college have fewer dropouts)
Teaching Conditions and Teacher's Preference for High Ability Students
Student Body's Attitude Toward Life, Educational Plans and Desires, and Achievement Level

The partial correlations for Percent of Twelfth Grade Non-White Graduates Going on to a Two or Four-Year College showed that the following variables retained a residual relationship:
Percent of Non-Whites Going on to Vocational Training and Number of Years since Non-Whites entered the School
Age of Building (negatively, which indicates more non-whites going on to college from the newer schools)
Teacher's Training, Teacher's Assignment to Present School (negatively, which indicates that the teachers are assigned to the school), and Percent of White Students in Teacher's class (negatively, indicating that there is a tendency for there to be more non-whites in the classrooms of schools that have more non-whites going on to college)

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* Percent of Girl Dropouts was eliminated from the analyses because it had a correlation of .87 with Percent of Boy Dropouts.

The partial correlations for Percent of Twelfth Grade Graduates Going on to Post-Secondary Vocational Training showed that the following variables retained a residual relationship:
Instructional Facilities, Specialized Staff and Services, and Pupil Teacher Ratio

The partial correlations for Percent of Twelfth Grade Non-White Graduates Going on to Post-Secondary Vocational Training showed that the only variable retaining a residual relationship was Percent Non-White Going on to College.

The partial correlations for Percent of Dropouts showed that the following regressor variables retained a residual relationship:
Tracking and Ability Grouping
Availability of Texts (negatively, which indicates fewer texts available in adequate numbers)
Percent Going on to College (negatively, which indicates either that higher dropout schools have fewer students going on to college or that a college-bound orientation on the part of the students may play a role in having a small number of dropouts)
Teacher Examinations, Scope and Severity of School Problems, percent of students in Daily Attendance, Teaching Conditions (negatively, which indicates that the teachers feel the students put forth little effort to achieve, there are many school problems, etc.)
Teacher's Preference for High Ability Students (negatively, which indicates either that schools with many dropouts have few teachers who prefer high ability students, or that the teacher's preference for high ability students plays a role in having fewer dropouts)
Teacher's Racial-Ethnic group membership (which indicates that schools with predominantly white teachers tend to have more dropouts than schools with predominantly non-white teachers)
Teacher's Assignment to Present School (negatively, which indicates that higher dropout schools are more likely to have teachers who did not choose the school but were assigned to it)

Student Body's Attitude Toward Life (negatively, which indicates that a less favorable attitude toward life on the part of the student body is associated with a higher proportion of dropouts)

SUMMARY

We saw in Chapter 5 that the school variables and student body variables became more and more interrelated (or correlated) with some of the outcome measures over the different grade levels. This effect was most noticeable in the case of Attitude Toward Life, Study Habits, and Achievement. Consequently, the influence of many school variables may be bound up with the nature of the students. To the extent that this is so, the students' role in the school outcomes would *not* be revealed in an analysis of this nature. This is an extremely important point, and one that must be borne in mind in the following summaries of the partial correlational analyses.

Expectations for Excellence. The regressor variables that appear to play a role in Expectations for Excellence, independently of the social background of the student body, are:
Teacher's Vocabulary Score (a slight negative value, indicating either that the students with higher expectations tend to have lower scoring teachers or that lower scoring teachers may play a role in producing higher expectations which might even be unrealistic)
Percent White of Teacher's Students
Student Body's Educational Plans and Desires, Study Habits, and Attitude Toward Life
Proportion of Females in the Student Body, and Kindergarten and Nursery School Attendance

Attitude Toward Life. The corresponding variables for Attitude Toward Life appear to be:
Percent of Graduates Going on to College, Student Body's Expectations, Educational Plans, Study Habits, and Achievement Level
Proportion of Females in Student Body and proportion of students who speak English (as opposed to some other language) at home and outside of school

Kindergarten and Nursery School Attendance, and of Parents' PTA Attendance

Educational Plans and Desires. Specialized Staff and Services plays a slightly negative role in Educational Plans and Desires. This role is independent of the student's social background, which may indicate that specialized staff preponderate in schools where the students are in need of remedial work, but where they do not plan to stay on long in school. Still other variables that play a role are: Percent of Students in Daily Attendance; Percent Going on to College; Teaching Conditions; Student Body's Expectations, Study Habits, Attitude Toward Life, and Achievement Level; and Nursery School Attendance.

Study Habits. The variables that play an independent role in Study Habits are primarily the Other Outcome measures of: Student Body's Expectations, Educational Plans, Attitude Toward Life; Proportion of Females in Student Body; Kindergarten and Nursery School Attendance; Parents' PTA Attendance; and the proportion of students who speak English (as opposed to a foreign language) at home or outside of school.

Achievement. The number of variables that appear to play an independent role in Achievement is greater than for the other outcome measures. These variables are: Specialized Staff and Services; Pupil-Teacher Ratio (negatively, indicating higher achievement levels for fewer pupils per teacher); use of Teacher Examinations in the appointment process (negatively, which may indicate either that lower-achieving schools use these to keep out less capable teachers, or that the better qualified teachers who are more likely to produce Achievement in their students are in such demand that they do not have to subject themselves to an examination procedure); enforcement of a Compulsory Attendance Law; Percent Going on to College; Teaching Conditions;Teacher's College Attended, Racial-Ethnic group membership, Annual Teaching Salary, and Vocabulary Score; Percent of White Students at Teacher's Undergraduate Institution; the Student Body's Educational Plans and Attitude Toward Life; the Proportion of Females in the Student Body (negatively, which indicates a slight tendency for higher achievement levels for a higher proportion of males); Kindergarten Attendance; and proportion of students who speak English as opposed to some other language at home (negatively, which begs a ready explanation).

Percent to College. The variables that play an independent role in Percent Going to College are: the Plant and Physical Facilities; amount of Homework Expected; the Percent of Dropouts (negatively, which indicates that schools with a higher percent going on to college have fewer dropouts); teachers feeling that they have more favorable Teaching Conditions, and showing a preference for high ability students; and Student Body's Educational Plans, Attitude Toward Life and Achievement Level.

Percent Non-White to College. The following variables play a role in Percent Non-White Going to College independently of the social background of the students and the Size of the school: Age of Building (negatively, which indicates that college-going non-whites come from newer buildings); length of time since Non-Whites Entered the school; Percent Non-White Going to Post-Secondary Vocational schooling; Teacher's Training; and Percent of White Students in Teacher's Class.

Percent to Vocational (Total and Non-White). The variables that appear to play an independent role in Percent of Graduates Going on to Vocational Training are: Instructional Facilities; Specialized Staff and Services; and Pupil-Teacher Ratio. The only variable that has a role for Percent Non-White Going on to Post-Secondary Vocational Training is Percent of Non-White Students Going on to College.

Percent Dropouts. The following variables play an independent role in Percent of Tenth Grade Boy Dropouts, (or Girl, since they are highly correlated): Tracking; Availability of Texts (negatively, which indicates fewer texts available in sufficient numbers); use of Teacher Exams in the appointment process; a high rating on Scope and Severity of School Problems (destruction of property, racial tension, etc.); Percent of Students in Daily Attendance (negatively, which indicates that schools with a larger number of dropouts also experience a greater percentage of absences); Percent to College (negatively, which suggests either the presence of many dropouts reduces the percent going on to college or, conversely, that the presence of a high proportion of college-bound students plays a role in lessening the number of dropouts); less favorable Teaching Conditions; Preference for High Ability Students (the teachers in schools with a low percentage of dropouts express a preference for high ability students, which may play a role in reducing the number of dropouts); Teacher's Racial-Ethnic Group Membership (schools with a high percentage of dropouts tend to have more white teachers); the Teacher's Assignment to his Present School (negatively, which indicates that the teacher was placed in the school rather than having voluntarily chosen it); and Attitude Toward Life (negatively, indicating that a more favorable Attitude Toward Life is associated with fewer dropouts).

6.7. Possible Causal Inferences

In many instances it is most difficult to give a causal interpretation to these partial correlations. In some cases it seems one could argue that the causal direction could be either way or both ways. In other cases it seems quite reasonable to suppose that the partial correlation represents both a cause and an effect. For example, a non-white teacher is more likely than a white teacher to have attended an undergraduate institution in which the students are predominantly non-white, and to have gone from there to a teaching situation in which both the students and the staff are predominantly non-white. Now, if there are less stringent requirements in non-white institutions and if those who teach in them have a less adequate preparation, then it seems likely that a cycle is set up which will perpetuate itself: poorer preparation of the teachers may result in less Achievement on the part of the students, some of whom in turn may attend predominantly non-white undergraduate institutions and then go into non-white teaching situations.

The inferences we have chosen to make will be organized around the following groups of variables: those that refer primarily to the school's Physical Facilities; those that refer to the school's Policies and Practices; those that refer to attributes of the school Personnel and Personnel Expenditures; and those that refer to attributes of the Student Body. When the term "social background" is used it refers to the student body's Socio-Economic Status, Family Structure and Racial-Ethnic Composition.

Physical Facilities. The relationships of Physical Facilities to the outcome measures are conspicuously few. It is not clear why schools with a larger plant and more physical facilities should have a higher percent of students going on to college. However, it is reasonable to expect that schools with many such Instructional Facilities as shops, labs, etc. might be able to involve their students in certain kinds of vocational activities, thereby stimulating them to pursue training beyond high school. The relations of Age of Building to Percent of Non-Whites Going to College suggests that some of the newer schools are sending more students on to college. But it is not clear why. Perhaps the new schools are located in urban areas where colleges are more accessible. Some of these new schools may even include junior colleges. One interesting result is the negative relationship of Pupils Per Room to Attitude Toward Life. It looks as if fewer Pupils Per Room means more intimacy among the pupils, and that this in turn may have an influence on the development of favorable attitudes. Although such variables as these are related to school outcomes independently of the students' social background and of School Size, the number of relationships is relatively small as we shall see.

Policies and Practices. Variables relating to a school's Policies and Practices are more numerous than those relating to its Physical Facilities. Nevertheless, relationships between them and the outcome measures are still relatively infrequent. Thus, the practice of tracking and ability grouping has received much attention and discussion. Our analysis, however, showed that it is related only to the Percent of Dropouts. But it is difficult to say to what extent this is a cause and to what extent it is a response to the nature of the student body. If it were playing a causal role one might think it would be related to Achievement.* Similarly, the provision of texts in sufficient numbers is related to only one outcome measure, the Percent of Dropouts, and the relationship is a slight one. This may reflect a situation that aggravates or further contributes to the number of dropouts. The Pupil Teacher Ratio is related negatively to Achievement and positively to the Percent of Graduates going on to Post-Secondary Vocational Training. If this can be regarded as an index of teacher "overload" it suggests that there is less "overloading" in higher achieving schools (which may result in more achievement), and more "overloading" in schools that have many students going on to post-secondary vocational training. Similarly, the fact that Teacher Exams is related negatively to Achievement and positively to Percent of Dropouts suggests either that the better teachers (who might produce more Achievement) seek out situations where they do not have to take Exams, or that the lower achieving, high dropout schools have to use Teacher Exams as a screening device, presumably because they have difficulty getting qualified teachers.

In conclusion, we must admit that, as with the facility variables, relationships between the policy and practice variables and the outcome measures are rather few and far between.

Personnel and Personnel Expenditures. The group of variables we have called Personnel and Personnel Expenditures manifests a greater frequency of association with the outcome measures. This association is independent of the students' social background and Size of the school, but not, as we shall see, of various racial-ethnic factors. One of the more prominent variables is the school's Specialized Staff and Services. It is negatively associated with Educational Plans and Desires and positively with Achievement and with Percent of Graduates going on to post-secondary vocational training. The "specialized staff" of this index include all the specialized teachers that a school has -- teachers of art, music, speech, and remedial reading, as well as guidance counselors, librarians, nurses, and the number of special classes offered. The partial correlations here suggest that a high score on Specialized Staff and Services tends to be characteristic of schools where the students do not have long range educational plans. These same schools may produce more Achievement (perhaps through the influence of the specialized teachers), and may have more graduates who go on to post-secondary vocational work (perhaps through the influence of the guidance counselors).

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* Of course, this particular analysis does not single out particular subgroups of students for whom tracking may or may not play a decisive role.

Teaching Conditions is another salient variable in this set. It is positively associated with Student Body's Educational Plans and Desires, Achievement, and Percent Going on to College. It is negatively associated with Percent of Dropouts. This index indicates the teacher's view of his teaching situation. A teacher with a high score is telling us that he feels that the students put forth a lot of effort to achieve and are of high academic ability. He also feels that the school has a good reputation and that there is a relative absence of school problems, etc. A teacher with a low score feels that there are many problems with the students. The important point to note is that this is what the teacher feels; the associations observed with this index are independent of the social background of the students in his school. Consequently, the teacher's attitudes toward the students may influence certain school outcomes independently of the student's social background. This may be the case with Achievement and with Student Body's Educational Plans and Desires. Many of the same kinds of considerations apply to Teacher's Preference for Student Ability Level. Moreover, the Teacher's College Attended is positively related to Achievement.*

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* A teacher with a high score on this index went to a public or private university (as opposed to a junior college or teachers' college) that offered an advanced degree, and felt that the school at which he was teaching had a high academic standing.

Conspicuous by reason of their failure to enter into any relationship are such variables as Teacher's Localism, Teacher's Socio-Economic Background, and Teaching Related Activities. The relationship of Teacher's Training to Percent of Non-White Going to College baffles ready interpretation. One would anticipate that this index would be related to more than just this particular outcome.

The Teacher's Racial-Ethnic group membership, however, is positively related both to Achievement and to the Percent of Dropouts. This suggests that white as opposed to non-white teachers may both promote more Achievement in their students *and* promote more dropouts. Indeed, if Achievement were negatively related to Percent of Dropouts one might facetiously argue that the teachers produce more Achievement by encouraging the lower achieving students to drop out. The role of white teachers in producing achievement is a point to which we shall return.

Higher paid teachers are found in higher achieving schools independently of student body's social background and school Size. This may indicate something about the competence of the teachers, an inference supported by the fact that Teacher's Vocabulary Score, which should play a role in teaching proficiency, is also correlated with Achievement. The negative relationship of Vocabulary Score with Expectations suggests that lower scoring teachers may be producing higher expectations, which seems unrealistic of them.

The association of Percent of White Students at Teacher's Undergraduate Institution with Achievement sheds a little more light on the role of white teachers. If we can regard this association as being at least partly causal, then it suggests that the better preparation of white teachers is manifested in the higher achievement levels of their students. It should also be noted that there is a positive association of Percent White of Teachers' Students with Expectations and with Percent of Non-White Going on to College, and that this association is independent of the student body's social background and school Size. If it is causal, this association suggests that classroom integration may have a favorable influence. One would also assume that this influence would occur for some of the other measures unless it is bound up with the students' social background.

We may conclude, then, that the personnel and personnel expenditure variables play a greater role in the outcome measures than do the facility or policy variables.

Student Body Attributes. The different outcome measures of the Student Body are the ones that have the greatest number of interrelationships. This indicates that a school with a high score on one outcome measure tends to score high on other outcome measures as well, and that this trend prevails independently of the students' social background and the school's Size. Some kind of a student body influence may be at work here, effecting a mutual reinforcement of certain goals. The nature of student body influences on subsets of students was partly investigated in the first report on the Educational Opportunities Survey (Coleman, et al., 1966). More detailed investigations will be forthcoming in a later volume in this series.

The association of Proportion of Females in the Student Body is positive for Expectations, Attitude Toward Life and Study Habits, but negative for Achievement. The negative sign here is puzzling. One would expect this variable to be related positively to many of the outcome measures, especially Achievement, because it is an often-confirmed fact that women tend to do better than men in academic endeavors.

Kindergarten Attendance and Nursery School Attendance both appear to play important roles in the outcome measures. Apparently Expectations, Attitude Toward Life, Study Habits and Achievement are all higher where a large proportion of students have attended Kindergarten. The same is true of Nursery School Attendance in relation to Expectations, Attitude Toward Life, Educational Plans, and Study Habits.

Frequency of Parents' PTA Attendance tends to have the same effect on Attitude Towards Life and Study Habits. The negative sign for English spoken at home (rather than some other language) is not easy to interpret.

SUMMARY

This chapter has attempted to study the relationship of a wide range of different variables to the outcome measures. Summaries were presented of a large number of partial correlations between these variables and the outcome measures. The correlations were independent of the social background of the student body* and the Size of the school. The groups of variables that were found to be most important for (or most frequently associated with) school outcomes were, in descending order: the attributes of the student body (viz. the kinds of students the school gets or has); the school personnel and personnel expenditures; the school's practices and policies; and the school's facilities.

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* As defined by Student Body's Socio-Economic Status, Family Structure, and Racial-Ethnic Composition.

7. STRATIFIED REGRESSION AND COMMONALITY ANALYSES OF SCHOOL ATTRIBUTES WITH ACHIEVEMENT

7.1. Selection of Variables for Stratification

The previous chapters showed how the school variables, both individually and in different combinations, related to school outcomes, including achievement. One result in this area was that the set of Student Body variables -- Socio-Economic Status, Family Structure and Racial-Ethnic Composition -- played a greater independent role in many of the School Outcomes than did a comprehensive set of School variables.*

Earlier analyses of the dependence of school outcomes on students' social background showed that when there was a lower correlation of Achievement with Socio-Economic Status, using the school as unit of analysis, the relative roles of the student body and school variables were reversed.† This suggested that Socio-Economic Status of the Student Body related differentially to Achievement for different subgroups. We therefore selected Socio-Economic Status as one variable for stratifying schools in order to examine the relationship of school variables with Achievement. To keep down the sheer volume of analysis, only Achievement was focussed on.

Another variable that was deemed to be of interest was the number of students enrolled in the school (School Size). Since this variable was a necessary correlate of the magnitude of a school's expenditures, it was hypothesized that there might be a point at which School Size and expenditures would be optimally related to Achievement. This line of reasoning was reinforced by the analyses in Chapters 5 and 6 which, it will be recalled, showed a negligible relationship between School Size and School Outcomes. This suggested that there might be some underlying non-linear relationship between the two that was being masked in an analysis that combined all the schools together. Accordingly, School Size was chosen as the second stratifying variable.

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* See Chapter 5. The terms "independent" and "common role" are defined on page 168.

† See Mayeske et al., Technical Note 61, in the List of References.

7.2. An Hypothesis-Testing Framework for Stratified Regressions

The main topic of interest in these analyses was the extent to which the regression of Achievement on one or more sets of variables for each of the groups defined by the stratifying variables was different from the regression obtained for all of the schools combined. In order to answer this question we used an hypothesis-testing framework outlined by Kuh and programmed by Beaton (Beaton 1964). This is a sequential procedure which utilizes various sums of squares and mean squares from a covariance analysis. The sequence of hypotheses runs as follows:

H_1: Are the cell regressions (including the cell intercepts) similar to the overall regression obtained when all schools are combined? If they are, then the sequence is terminated. However, if this hypothesis is rejected then the next hypothesis in the sequence is tested.

H_2: Are the cell slopes (excluding the cell intercepts) similar to the overall slope obtained when all schools are combined? If this hypothesis is rejected then the sequence is terminated. However, if the hypothesis is accepted then (in Kuh's presentation) there are two more steps for distinguishing between different kinds of intercepts.*

The F statistic was used to determine whether to accept or reject the hypotheses. The following four-cell stratification was used:

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* Since only the first two hypotheses are of interest to our analysis the others will not be discussed.

SOCIO-ECONOMIC STATUS

		High	Low	
SIZE	Large			Total Large
	Small			Total Small
		Total High SES	Total Low SES	All Schools Combined

This hypothesis-testing framework does not allow for a direct test of the interaction between Size and Socio-Economic Status. Consequently, marginal analyses for these two variables are also given as an aid in inferring what the magnitude of their interaction might be. In order to conserve degrees of freedom two levels for each variable were used.

The analyses that follow use the student body and school variables as outlined in section 5.1 of Chapter 5. For the two-set case the Student Body Background variables were used in conjunction with the comprehensive set of thirty-one School variables. For the four-set case the set of School variables was broken up into the three subsets of School Personnel and Personnel Expenditures, Pupil Programs and Policies, and Plant and Physical Facilities. For both the two-set and four-set case the Student Body Background variables remained the same, viz., Student Body's Socio-Economic Status, Family Structure and Racial-Ethnic composition. It is important to note that the stratifying variables of Size and Socio-Economic Status were also retained in the analyses _within_ each stratum. The reason was that we anticipated there would be variations in Achievement within each cell or stratum that would be associated with these variables.

For almost all stratifications the F statistic for the thirty-one School variables and Student Body Background variables indicated that the cell slopes were different. These F values usually had a value of two or greater; the traditional significance levels were far surpassed.

As in other chapters, associational language will be used to summarize the results. Possible causal inferences will be reserved for the Summary.

7.3. Commonality Analyses of Three Stratifying Variables: the Two-Set Case

The following tables give the squared multiple correlations, unique portions and commonality coefficients for stratifications by Size (number of students enrolled in the school), Socio-Economic Status, and Size by Socio-Economic Status. The set of School variables is made up of the thirty-one variables outlined in Chapter 5. The set of Student Body variables is made up of Student Body Socio-Economic Status, Family Structure, and Racial-Ethnic Composition.*

7.3.1. Stratifications by Size

Table 7.3.1 gives the squared multiple correlations, commonality coefficients and unique portions for two levels of stratification by School Size. To define the two strata, the School Size distribution was cut at the approximate mean of the distribution for each grade level.

Inspection of Table 7.3.1 shows that the unique portion for the Student Body variables, U(B), is usually greater than the unique portion for the School variables, U(S), except for large schools at the third and first grade. The commonality coefficient, C(BS), remains high at each grade level for all stratifications. For large schools, however, it is usually a little higher.

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* A definition of commonality coefficients and unique associations for the two-set case is given in Chapter 5. See Appendix II for a mathematical exposition.

Table 7.3.1. - Squared Multiple Correlations[*] of B and S With Achievement, Expressed As A Function of Their Unique Association and Their Commonality Coefficients, for Stratifications by Size of School

			SETS OF REGRESSOR VARIABLES					
			B	B	B All	S	S	S All
Grade Level	Commonality Coefficients [†]		Small	Large	Schools Combined	Small	Large	Schools Combined
TWELFTH	First	U(B)	07	04	08			
	Order	U(S)				06	03	04
	Second Order	C(BS)	73	86	75	73	86	75
	R^2 For A Single Set of Variables		80	90	82	80	90	79
	R^2 For Both Sets of Variables	(BandS)	87	94	86	87	94	86
	Number of Schools		513	267	780	513	267	780
NINTH	First	U(B)	09	10	11			
	Order	U(S)				07	03	04
	Second Order	C(BS)	69	81	73	69	81	73
	R^2 For A Single Set of Variables		78	91	84	77	84	77
	R^2 For Both Sets of Variables	(BandS)	86	94	88	86	94	88
	Number of Schools		265	335	600	265	335	600
SIXTH	First	U(B)	11	08	10			
	Order	U(S)				06	03	04
	Second Order	C(BS)	64	75	69	64	75	69
	R^2 For A Single Set of Variables		75	83	79	69	78	73
	R^2 For Both Sets of Variables	(BandS)	80	86	83	80	86	83
	Number of Schools		1070	1302	2372	1070	1302	2372

[†] Small schools have 789 or fewer students at grade twelve, 631 or fewer at grade nine, and 418 or fewer at grades six, three and one.

[*] Rounded to two places of decimals after computation, leading decimal points omitted.

Table 7.3.1. - **(continued)**

			SETS OF REGRESSOR VARIABLES					
Grade Level	Commonality Coefficients		B Small	B Large	B All Schools Combined	S Small	S Large	S All Schools Combined
THIRD	First	U(B)	11	02	07			
	Order	U(S)				05	07	04
	Second Order	C(BS)	36	56	45	36	56	45
	R^2 For A Single Set of Variables		47	59	53	40	63	49
	R^2 For Both Sets of Variables (BandS)		51	65	56	51	65	56
	Number of Schools		1151	1302	2453	1151	1302	2453
FIRST	First	U(B)	10	09	05			
	Order	U(S)				08	24	09
	Second Order	C(BS)	31	37	38	31	37	38
	R^2 For A Single Set of Variables		41	47	43	39	62	47
	R^2 For Both Sets of Variables **(BandS)**		50	71	52	50	71	52
	Number of Schools		614	688	1302	614	688	1302

Moreover, Achievement is usually more predictable with the Student Body variables than with the School variables (see R^2 for a single set of variables). The exception to this is again at the first and third grades. In both places, Achievement is slightly more predictable for large schools with the School rather than the Student Body variables. When both the Student Body and School variables are used, Achievement is more predictable for large than for small schools at all grade levels (see R^2 for both sets of variables).

These results taken together suggest that when schools are stratified only by size there are no appreciable differences in the predictability of Achievement. The differences that do appear are primarily at the lower grade levels. The most clearly defined trend is for Achievement to be more predictable for large than for small schools.

7.3.2. Stratification by Student Body Socio-Economic Status

Given a moderate-to-high correlation of the student body's Socio-Economic Status (SES) and Achievement, one would expect that if schools were stratified by SES, then its correlation with Achievement within each stratum would be considerably reduced. This would occur because the schools in each stratum tend to resemble each other in SES. Since within each stratum SES has a lower correlation with Achievement, there is a possibility that other variables might now correlate more highly with Achievement than they did for all schools prior to stratification. Table 7.3.2 presents the squared multiple correlations, unique portions, and commonality coefficients for two levels of stratification by SES. The SES distribution was cut at about its mean in order to define the two strata. The most obvious feature of Table 7.3.2 is that the squared multiple correlations for the Student Body variables in each stratum show a moderate-to-marked decrease from the All Schools Combined value. In the light of our previous analysis, this was only to be expected. Clearly, the stratifications are at least partially effective in reducing the associations

Table 7.3.2. - Squared Multiple Correlations*of B and S With Achievement, Expressed As A Function of Their Unique Association and Their Commonality Coefficients, for Stratifications By Student Body SES

			SETS OF REGRESSOR VARIABLES					
Grade Level	Commonality Coefficients		B Low	B High	B All Schools Combined	S Low	S High	S All Schools Combined
TWELFTH	First	U(B)	06	26	08			
	Order	U(S)				15	19	04
	Second Order	C(BS)	67	33	75	67	33	75
	R^2 For A Single Set of Variables		73	59	82	82	52	79
	R^2 For Both Sets of Variables (BandS)		88	78	86	88	78	86
	Number of Schools		371	409	780	371	409	780
NINTH	First	U(B)	08	20	11			
	Order	U(S)				15	13	04
	Second Order	C(BS)	56	40	73	56	40	73
	R^2 For A Single Set of Variables		65	59	84	71	53	77
	R^2 For Both Sets of Variables (BandS)		79	72	88	79	72	88
	Number of Schools		283	317	600	283	317	600
SIXTH	First	U(B)	08	17	10			
	Order	U(S)				09	09	04
	Second Order	C(BS)	57	33	69	57	33	69
	R^2 For A Single Set of Variables		65	50	79	66	42	73
	R^2 For Both Sets of Variables (BandS)		74	59	83	74	59	83
	Number of Schools		1285	1087	2372	1285	1087	2372

* Rounded to two places of decimals after computation, leading decimal points and zeroes omitted.

Table 7.3.2. - **(continued)**

			SETS OF REGRESSOR VARIABLES					
			B	B	B	S	S	S
Grade Level	Commonality Coefficients		Low	High	All Schools Combined	Low	High	All Schools Combined
THIRD	First	U(B)	05	12	07			
	Order	U(S)				07	09	04
	Second Order	C(BS)	23	17	45	23	17	45
	R^2 For A Single Set of Variables		28	29	53	29	26	49
	R^2 For Both Sets of Variables (BandS)		35	38	56	35	38	56
	Number of Schools		1338	1115	2453	1338	1115	2453
FIRST	First	U(B)	03	10	05			
	Order	U(S)				16	12	09
	Second Order	C(BS)	17	12	38	17	12	38
	R^2 For A Single Set of Variables		20	22	43	33	24	47
	R^2 For Both Sets of Variables (Band S)		36	34	52	36	34	52
	Number of Schools		696	606	1302	696	606	1302

with SES.

Inspection of Table 7.3.2 also shows that the unique portions for low SES schools are greater for the School variables (S) than for the Student Body variables (B), while for high SES schools the reverse is true. That is, for high SES schools the Student Body variables (B) have a greater unique portion than do the School variables (S), except at the first grade. Nothing in the earlier portion of our analysis had led us to expect these results.

The commonality coefficients, C(BS), are uniformly larger for low SES than for high SES schools. This indicates that there is a greater overlap or confounding of Student Body and School variables for low SES than for high SES schools. Achievement is also more predictable from the School variables than from the Student Body variables for low SES schools. For high SES schools the reverse is true. In other words, for high SES schools Achievement is more predictable from the Student Body than from the School variables except at the first grade.* When both sets of variables are used, Achievement is more predictable for low SES than for high SES schools.† These results suggest that the role the school plays in promoting Achievement may differ according to the students' Socio-Economic Background. In fact, the lower the school's SES, the greater is the independent as well as the cooperative role of school attributes with student body attributes. Nevertheless, all low SES schools, unlike all high SES schools, do not have similar Achievement levels. The difference between the two types of schools here would appear to be in the relative roles of the Student Body and School variables in their relationship with Achievement levels.

7.3.3. Stratifications by School Size and Student Body Socio-Economic Status

Table 7.3.3 presents the squared multiple correlations, commonality coefficients and unique portions

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* See R^2 for single sets of variables.

† Except at the third grade.

Table 7.3.3. - Squared Multiple Correlations*of B and S With Achievement, Expressed as a Function of Their Unique Association and Their Commonality Coefficients, for Stratifications by School Size and Student Body SES

			SETS OF REGRESSOR VARIABLES									
			B	B	B	B	B	S	S	S	S	S
Grade Level	Commonality Coefficients	† Size SES	Small Low	Large Low	Small High	Large High	All Schools Combined	Small Low	Large Low	Small High	Large High	All Schools Combined
TWELFTH	First Order	U(B)	05	08	21	03	08					
		U(S)						21	14	30	12	04
	Second Order	C(BS)	66	71	33	76	75	66	71	33	76	75
	R^2 For A Single Set of Variables		70	79	54	79	82	87	85	63	88	79
	R^2 For Both Sets of Variables (BandS)		92	93	84	91	86	92	93	84	91	86
	Number of Schools		278	93	235	174	780	278	93	235	174	780
NINTH	First Order	U(B)	05	12	08	20	11					
		U(S)						21	17	27	08	04
	Second Order	C(BS)	57	56	31	58	73	57	56	31	58	73
	R^2 For A Single Set of Variables		62	68	39	78	84	78	73	58	65	77
	R^2 For Both Sets of Variables (BandS)		84	85	66	85	88	84	85	66	85	88
	Number of Schools		143	140	122	195	600	143	140	122	195	600
SIXTH	First Order	U(B)	07	10	13	18	10					
		U(S)						11	11	15	08	04
	Second Order	C(BS)	55	58	27	41	69	55	58	27	41	69
	R^2 For A Single Set of Variables		62	68	40	59	79	66	68	42	49	73
	R^2 For Both Sets of Variables (BandS)		73	79	55	67	83	73	79	55	67	83
	Number of Schools		607	678	463	624	2372	607	678	463	624	2372

† Small schools have 789 or fewer students at grade twelve, 631 or fewer at grade nine, and 418 or fewer for grades six, three and one.

* Rounded to two places of decimals after computation, leading decimals and zeroes omitted.

Table 7.3.3. - **(continued)**

SETS OF REGRESSOR VARIABLES

Grade Level	Commonality Coefficients	†Size SES	B Small Low	B Large Low	B Small High	B Large High	B All Schools Combined	S Small Low	S Large Low	S Small High	S Large High	S All Schools Combine
THIRD	First	U(B)	06	02	12	08	07					
	Order	U(S)						09	09	12	14	04
	Second Order	C(BS)	20	29	12	25	45	20	29	12	25	45
	R^2 For A Single Set of Variables		26	32	24	33	53	29	38	24	39	49
	R^2 For Both Sets of Variables (BandS)		36	41	36	47	56	36	41	36	47	56
	Number of Schools		637	701	514	601	2453	637	701	514	601	2453
FIRST	First	U(B)	05	11	15	07	05					
	Order	U(S)						17	35	17	23	09
	Second Order	C(BS)	13	15	10	14	38	13	15	09	14	38
	R^2 For A Single Set of Variables		18	25	24	20	43	30	50	27	37	47
	R^2 For Both Sets of Variables (BandS)		35	60	41	43	52	35	60	41	43	52
	Number of Schools		326	370	288	318	1302	326	370	288	318	1302

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† Small schools have 789 or fewer students at grade twelve, 631 or fewer at grade nine, and 418 or fewer for grades six, three and one.

* Rounded to two places of decimals after computation, leading decimals and zeroes omitted.

for stratifications by two levels of school Size and two levels of SES. These two levels were defined by cutting each distribution at about its mean.

Inspection of Table 7.3.3 shows that the squared multiple correlations of the Student Body variables for the individual groups tend to be uniformly lower than for all groups combined. This is to be expected, since the schools within each cell are more homogeneous with regard to SES than they are between cells. Moreover, one of the Student Body variables is the Socio-Economic Status of the student body. One would expect, therefore, that the Student Body variables would play a lesser role than the School variables in predicting Achievement. But one would not expect the large differences in the level of predictability that are observed for some of these groups.

Inspection of the unique portions shows that the Student Body variables (B) have a smaller unique portion in predicting Achievement than do the School variables (S).* Some of these unique values for the individual strata are considerably larger than for all groups combined.

The commonality coefficients, C(BS), increase in magnitude with the grade levels. For small schools, however, the commonality with high SES students is much lower than for the other groups. This indicates that there may be less of a common role played by these variables in their relationship with Achievement. For all the strata and grade levels,* the predictability of Achievement is greater from the School variables than from the Student Body variables. It tends to be smaller in absolute value for schools that are small in size and high in SES than for the other stratification groups. Except at grades three and one, this is true even when both S and B are used.

These results suggest that where schools are homogeneous in the socio-economic backgrounds of their students the school variables may play a greater role in promoting Achievement than where they are heterogeneous. The extent of this involvement seems likely to vary with the level of socio-economic background of the students and the number of students in the school.

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* Except at grades six and nine for schools that are large in size and high in SES.

7.4. Commonality Analyses of Three Stratifying Variables: the Four-Set Case

Commonality analyses have already been conducted for Student's Socio-Economic Status, Family Structure and Racial-Ethnic Composition (i.e. the set we have called B), and for School Personnel and Personnel Expenditures, Pupil Programs and Policies, and Plant and Physical Facilities.* For the four-set case these analyses did not yield many new insights. Consequently, the extensive tabular material is not presented. For all the stratifications it was observed that most of the predictable variance in Achievement was contained in the second-order commonality for the Student Body and School Personnel variables. The Pupil Programs and Facilities sets tended to join with the Student Body and School Personnel sets at the third order. These are the same kinds of trends that were observed in Chapter 5.

The predictability of Achievement for the different strata using the School Personnel variables was much the same as for the two-set case. That is, Achievement was more predictable from the set of School Personnel variables for Large than for Small schools, for Low than for High SES schools, and for both Small and Large Low SES schools than for Small and Large High SES schools.

SUMMARY

This chapter attempted to study the manner in which different sets of variables contributed to Achievement when schools were stratified into two levels of School Size and two levels of Student Body's Socio-Economic Status. Analyses were conducted with both two sets and four sets of variables. For the two-set case a set of variables consisting of Student Body's Socio-Economic Status, Family Structure and Racial-Ethnic Composition was used to represent the student body attributes, and a comprehensive set of thirty-one variables to represent the school attributes. For the four-set case the same set of variables was used to represent the student body attributes. The set of school variables, however, was subdivided into: School Personnel and Personnel Expenditures, Pupil Programs and Policies, and Plant and Facilities.

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* Both the variables and the analyses in question are described in Chapter 5.

The most notable result obtained from the stratifications by School Size was that over the different grade levels Achievement tends to be more predictable for Large than for Small schools. The stratifications by Student Body's Socio-Economic Status (SES) showed that the independent role played by the Student Body variables was greater than that of the School variables for high SES schools. In contrast, for low SES schools the School variables played a greater independent role than the Student Body variables. There was also more confounding or overlap between the Student Body and School variables for low than for high SES schools.

Achievement was found to be more predictable for low SES than for high SES schools. As far as its contribution to Achievement was concerned, the School Personnel set of variables for the four-set case was found to parallel the set of School variables for the two-set case.

When stratifications were made by both Size and SES, Small schools with high SES students were found to differ most from schools in other categories. For these schools, Achievement was found to be less predictable, the overlap or confounding of the Student Body and School variables was lower, and the School variables played a larger independent role in Achievement. For the four-set analysis, the set of variables pertaining to the School Personnel was found to parallel the results obtained for the School variables in the two-set case.

In general, these results suggest that the extent of involvement of School variables and Student Body variables in the prediction of Achievement will vary with School Size, on the one hand, and Student Body's Socio-Economic Status, on the other. But before any conclusions can be reached about the efficacy of these stratifications other kinds of stratifications need to be tried.

8. A QUASI-LONGITUDINAL STUDY OF SCHOOL ACHIEVEMENT

8.1. Comparisons Between Grades

In the foregoing chapters a frequently used dependent variable has been achievement at a given grade level. Such a measure reflects the students' lifetime experiences. In focusing on the formal educational process, however, it is also desirable to examine changes that take place during the school years. This can be done by controlling on the initial standing of the schools, that is, by statistically equalizing the starting point in first grade. The effect is to put school factors on a more equal footing with student background factors as determinants of achievement. As we have already explained (pp.16-18), this is not the kind of problem the Educational Opportunity Survey was designed to solve. Due, however, to the Survey's cluster sampling technique, it was possible to carry out quasi-longitudinal analyses of achievement. This chapter is devoted to such analyses.

Two analyses were undertaken, one at the third grade level and one at the sixth grade. Since the approach was the same, it will be sufficient to describe only the third grade analysis.

The study was naturally restricted to schools for which both first and third grade data were available. In the absence of longitudinal data, it was assumed that if the third graders in a given school had been tested two years earlier, their average score would have been the same as the average of the first graders in that school who actually were tested. This is a plausible assumption if the determinants of first-grade achievement were in fact the same for these two groups of students. We therefore need a single overall measure that allows us to compare both of them. The comparison should be on the basis of how similarly they would respond to a first-grade achievement test. We therefore need to define the weighted sum of student body variables that is most highly correlated with first-grade achievement. These weights were found to be .360 for Socio-Economic Status, .004 for Family Structure and Stability, and .431 for Racial-Ethnic Group Composition. Thus for each school we have the weighted first-grade sum:

$$S_1 = .360\ X_{1\ SES} + .004\ X_{1\ FSS} + .431\ X_{1\ RACE}$$

where

$X_{1\ SES}$ is the school average on the first grade Socio-Economic Status index
$X_{1\ FSS}$ is the school average on the first grade Family Structure and Stability index
$X_{1\ RACE}$ is the school average on the first grade Racial-Ethnic Group index

Likewise for each school the weighted third grade sum is:

$$S_3 = .360\ X_{3\ SES} + .004\ X_{3\ FSS} + .431\ X_{3\ RACE}$$

The similarity between the first and third grades is then indicated by the correlation between S_1 and S_3. In the present case, this was found to be .89. At the sixth grade a similar weighted sum S_6 was defined and the correlation between S_1 and S_6 found to be .86. These high correlations suggest that for our purposes the student bodies are indeed similar. We may therefore assume that the findings of our quasi-longitudinal analysis are truly indicative of changes that occur during the school experience.

The next point of interest is how strong a relationship exists between first- and third-grade achievement. If these variables are highly correlated, then most of the variation in third-grade achievement can be accounted for by first-grade achievement. In such a case there would be little residual variation to be accounted for by student background and school variables. The correlation, however, is .69. This implies that 52% of the variation in third-grade achievement is unexplained by first-grade variation. At the sixth grade the corresponding figure is 54%.* To be sure, some of the unexplained variation may arise because the student bodies are not exactly the same. Nevertheless, these values seem to justify the next step, which is to regress the residual variation in achievement against potential determinants of achievement.

On the basis of the foregoing reasoning the third-grade scores were, in effect, regressed against first-grade scores. The resulting residuals, which are uncorrelated with first grade scores, were then regressed against the student body background variables and the school variables.† The first-grade tests were administered at the beginning of the school year. Our procedure therefore controls for the initial achievement of the students without removing from the background and school variables the variance they share with the first grade scores.‡

Another way of looking at the analysis is as follows. The zero-order correlations between third-grade achievement and the student body background and school variables are replaced by part correlations. First-grade achievement is partialed out of third-grade achievement. A part correlation is defined as:

$$r_{i(j.k)} = \frac{r_{ij} - r_{ik}\, r_{jk}}{\sqrt{1 - r^2_{jk}}}$$

where

The i subscript corresponds to a student body background or school variable
The j subscript corresponds to third-grade achievement
The k subscript corresponds to first-grade achievement§

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* These correlations assume a linear relationship. A log-log transformation of the first- and sixth-grade data left 62% of the variation unexplained.

† The fact that the residuals are uncorrelated with the first grade scores is an important property. In other procedures -- taking simple differences, for example, or ratios of achievement scores -- this is not so, and the result is therefore a set of correlations between dependent and regressor variables that are systematically biased.

‡ For a more extensive discussion of this approach, see Thorndike 1963.

§ See DuBois 1957; McNemar 1962.

Comparison with the corresponding partial correlation shows that the part correlation:

$$r_{ij.k} = \frac{r_{ij} - r_{ik}\, r_{jk}}{\sqrt{1-r^2_{ik}}\,\sqrt{1-r^2_{jk}}}$$

is of the same sign as the partial correlation, but that the absolute value is smaller. By computing part correlations and substituting them for the corresponding zero-order correlations, the quasi-longitudinal regression analyses were performed directly on the modified correlation matrices. This procedure avoided dealing directly with the residuals.

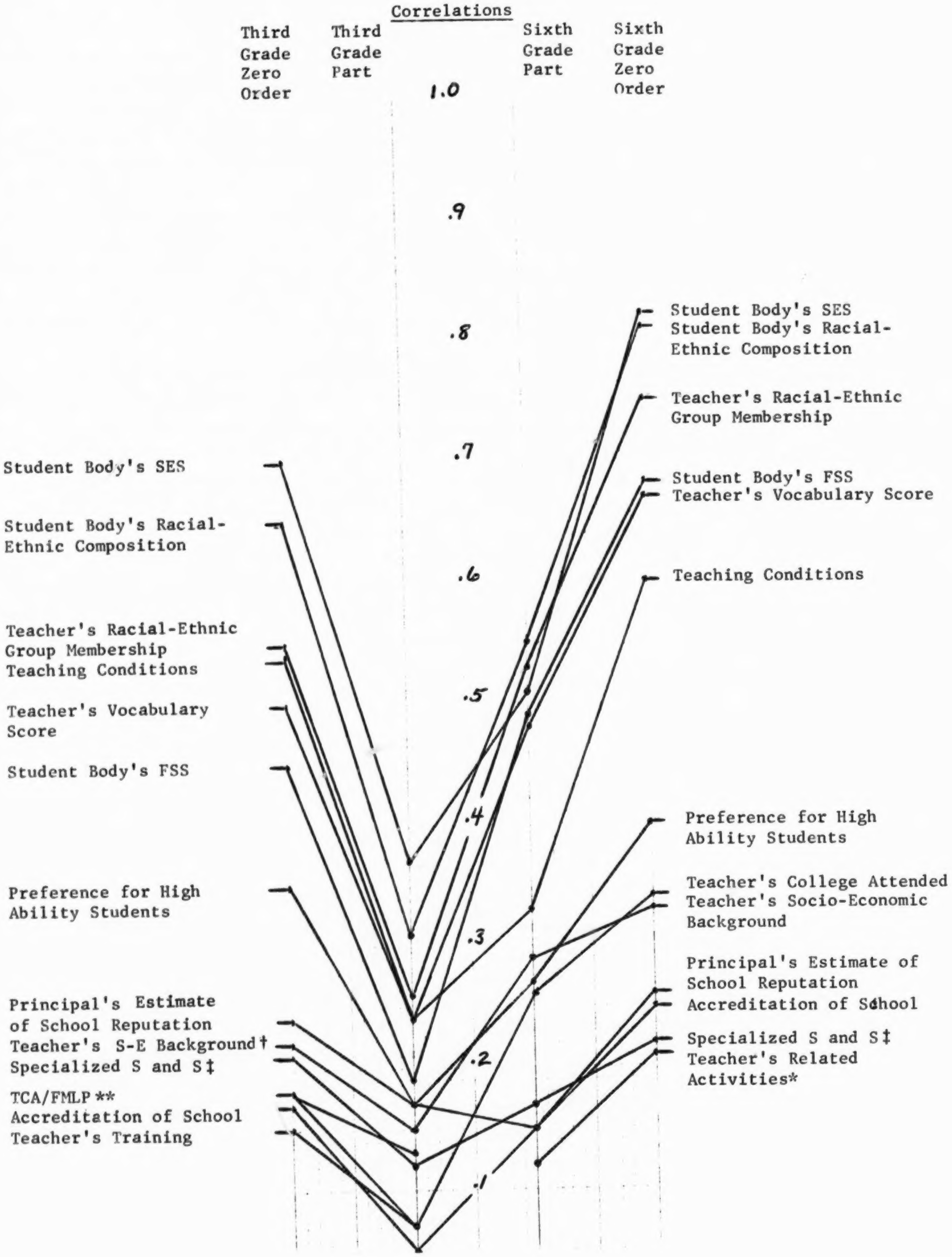
Regression and commonality analyses with respect to residual achievement used the same student and school variables as were set forth in Chapter 5. Stratified regressions of the type described in Chapter 7 were also carried out, but their results were so close to those obtained earlier that they will not be given here.

8.2. Part Correlations With Achievement

Before looking at the regression analyses it will be useful to examine the part correlations of the highest correlates with achievement. We will look only at third-grade variables for which the absolute value of the zero-order correlation with achievement is equal to or greater than .15, and at sixth-grade variables for which it is equal to or greater than .20. These variables are displayed graphically in Figure 8.2.1. The vertical scale runs from a correlation of .05 to one of 1.0. Four correlations are shown for each variable: the left-most for the third-grade zero-order correlation with achievement, followed by the third-grade part correlation, the sixth-grade part correlation and the sixth-grade zero-order correlation. Two of the variables, Free Milk and Lunch Programs, and Teaching Related Activities, actually have negative correlations. But, since our interest here is in changes, the absolute values of these variables have been plotted.

If we confine our examination to variables that appear at both grade levels, we are led to conclude that

Figure 8.2.1. - Zero-Order and Part Correlations With Achievement



*Negative Correlations.
**Teacher's College Attended/Free Milk and Lunch Programs.
†Teacher's Socio-Economic Background.
‡Specialized Staff and Services.

they tend to fall into two groups:
(1) Those with relatively high zero-order correlations, viz. Student Body's Socio-Economic Status, Student Body's Racial-Ethnic Composition, Teacher's Racial-Ethnic Group Membership, Teaching Conditions, Teacher's Vocabulary Score and Student Body's Family Structure and Stability
(2) Those with relatively small correlations, viz. Teacher's Preference for High Ability Students, Principal's Estimate of School Reputation, Teacher's Socio-Economic Background, Specialized Staff and Service, Teacher's College Attended, and Accreditation of School.

In each case the part correlation is less than the zero-order correlation. The net effect, however, is to bring the two groups closer together. As a result, the role of the weaker variables is strengthened. This result is most noteworthy at the third grade; by the sixth grade the old groups are beginning to reform. The strength of some variables changes between the third and sixth grades. For instance, there are decreases in both Teaching Conditions and Principal's Estimate of School Reputation, and increases in Teacher's College Attended.

Analysis revealed that the part correlations were smaller, with a few very minor exceptions, than the zero-order correlations. We may infer, then, that first-grade achievement was not masking any important relationships between higher grade achievement and the other thirty-four variables.

8.3. Regression and Commonality Analyses for Two Sets of Variables

Regression analyses of residual achievement were carried out using the subsets of variables described in Chapter 5. The results are given in Table 8.3.1. Residual achievement is of course less predictable than absolute level of achievement. But the general pattern that emerges from the commonality analysis is similar to the one already discovered. The squared multiple correlation for third-grade achievement was .5646, Table 8.3.1.-Comparison of Third and Sixth Grade Achievement Regression Analyses* with Residual Achievement Regression Analyses for Student Body and School Variables

Commonality Coefficients†		Student Body (B)				School (S)			
		THIRD GRADE ACHIEVEMENT	RESIDUAL THIRD GRADE ACHIEVEMENT	RESIDUAL SIXTH GRADE ACHIEVEMENT	SIXTH GRADE ACHIEVEMENT	THIRD GRADE ACHIEVEMENT	RESIDUAL THIRD GRADE ACHIEVEMENT	RESIDUAL SIXTH GRADE ACHIEVEMENT	SIXTH GRADE ACHIEVEMENT
First	U(B)	07	04	05	10				
Order	U(S)					04	03	06	04
Second Order	C(BS)	45	11	30	69	45	11	30	69
R^2 for a Single Set of Variables		53	15	35	79	49	13	36	73
Number of Schools		2453	1105	1014	2372	2453	1105	1014	2372

†The squared multiple correlations obtained when both sets are entered into the regression are: Third Grade, 56; Residual Third Grade, 18; Sixth Grade, 83; Residual Sixth Grade, 41.

*Rounded to two places of decimals after computation, leading decimal points and zeros omitted.

compared to .1758 for residual third grade achievement; sixth grade achievement was .8296, compared to .4111 for residual sixth grade achievement. The unique associations of both student body and school variables are still small and are in any case overshadowed by the commonality coefficient C(B,S). However, the large decrease in predictability associated with the control on first-grade achievement results largely from the smaller commonality coefficients. In consequence, the unique associations account for a larger portion of the explained variation. As before, the commonality coefficient for student body and school variables is larger at the higher grade level.*

8.4. Regression and Commonality Analyses for Four Sets of Variables

Table 8.4.1 displays the results of residual achievement regressed on four sets of variables: Student Body, School Personnel and Personnel Expenditures, Pupil Programs and Policies, and Physical Plant and Facilities. As may be seen by looking at the next-to-last row of the table, residual sixth-grade achievement is equally predictable from Student Body or School Personnel variables. At the third-grade level Student Body variables are slightly better predictors. From the same row it may be seen that residual achievement is virtually unrelated to Pupil Programs and Policies or to Physical Plant and Facilities.

Looking at the commonality analysis we see that the unique associations of the Student Body variables are somewhat larger than those of the School Personnel variables. The predominant coefficient is still the commonality between the two sets. There is some evidence that removing the variation in first-grade achievement scores is less detrimental to the predictive capacity of School Personnel variables than to that of Student Background variables. At any rate,

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* This is probably due to the greater predictability at the sixth grade rather than to more highly interrelated regressor variables.

Table 8.4.1.- Comparison of Third and Sixth Grade Achievement Regression Analyses* With Residual Regression Analyses for Student Body Variables and Three Sets of School Variables

		Sets of Regressor Variables															
		Student Body (B)				School Personnel and Personnel Expenditures (T)				Pupil Programs and Policies (P)				Physical Plant and Facilities (F)			
Commonality Coefficients†		THIRD GRADE ACHIEVEMENT	RESIDUAL THIRD GRADE ACHIEVEMENT	RESIDUAL SIXTH GRADE ACHIEVEMENT	SIXTH GRADE ACHIEVEMENT	THIRD GRADE ACHIEVEMENT	RESIDUAL THIRD GRADE ACHIEVEMENT	RESIDUAL SIXTH GRADE ACHIEVEMENT	SIXTH GRADE ACHIEVEMENT	THIRD GRADE ACHIEVEMENT	RESIDUAL THIRD GRADE ACHIEVEMENT	RESIDUAL SIXTH GRADE ACHIEVEMENT	SIXTH GRADE ACHIEVEMENT	THIRD GRADE ACHIEVEMENT	RESIDUAL THIRD GRADE ACHIEVEMENT	RESIDUAL SIXTH GRADE ACHIEVEMENT	SIXTH GRADE ACHIEVEMENT
First Order	$U(X_i)$	07	04	05	10	03	02	03	03		01	02	01				
Second Order	C(BT)	35	08	27	55	35	08	27	55								
	C(BP)	01		-01						- 01		- 01					
	C(BF)																
	C(TP)							01	01			01	01				
	C(TF)																
	C(PF)																
Third Order	C(BTP)	08	01	03	12	08	01	03	12	08	01	03	12				
	C(BTF)	02	01	01	02	02	01	01	02					02	01	01	02
	C(BPF)																
	C(TPF)																
Fourth Order	C(BTPF)																
R^2 for a Single Set of Variables		53	15	35	79	48	12	35	72	10	02	06	14	02	02		02
Number of Schools		2453	1105	1014	2372	2453	1105	1014	2372	2453	1105	1014	2372	2453	1105	1014	2372

†The squared multiple correlations obtained when all four sets are entered into the regression are: Third Grade, 56; Residual Third Grade, 18; Sixth Grade, 83; Residual Sixth Grade, 41.

*Rounded to two places of decimals after computation, leading decimal points and zeros omitted.

the decrease in R^2 for the sixth grade is larger for Student Background variables than for School Personnel, and the unique associations of the former do not hold up as well as those of the latter. The part correlations of regressor variables with achievement vis-à-vis the zero-order correlations also support this view.

SUMMARY

The purpose of this chapter was to examine the roles of student and school characteristics in the determination of scholastic achievement after equalizing the inputs to the schools. This equalization was on the basis of achievement tests administered at the beginning of the first grade. Since real longitudinal data was not available, the analysis depends upon the assumption that the determinants of first-grade achievement for first-, third- and sixth-grade students in a given school were comparable. Evidence in support of this assumption was presented. Conceptually the procedure was to regress third-grade achievement against first-grade achievement, and then to use the residuals as a new dependent variable. The procedure was repeated for sixth grade achievement.

A total of thirty-four student and school variables were then used to predict the residual scores, and thus to account for the variation among over- and under-achieving schools. The three student variables were Socio-Economic Status, Family Structure and Stability, and Racial-Ethnic Group Composition. The thirty-one school variables were divided into seventeen variables pertaining to school personnel and personnel expenditures, ten variables pertaining to pupil programs and policies, and four variables pertaining to the school's physical plant and facilities.

The regression and commonality analyses yield a pattern from which three pairs of possible alternative conclusions can be drawn, as follows:
(1) Third-grade and sixth-grade achievement either are or are not highly predictable from first-grade achievement
(2) Factors attributable to the students either do or

do not exert a continuing influence upon achievement during the elementary school years
(3) Factors associated with the schools either do or do not affect scholastic achievement.

The first noteworthy result was that the degree of relationship between first-grade achievement and higher-grade achievement was rather moderate: first-grade achievement accounted for only 48% of the third-grade variation and 46% of the sixth-grade variation. Though some of the residual variation might have been attributable to differences between the student bodies, there was a definite possibility that a substantial portion of the variation in scholastic achievement could be explained by factors operating during the school years, not the pre-school years.

Further analysis showed that the thirty-four student and school variables were not very good predictors of residual third grade achievement. However, the explained variance, though small, was partitioned among several sets of variables to much the same effect as in earlier analyses. That is, the largest unique contributions were made by the Student Body and School Personnel sets of variables, and the joint contribution of these two sets was larger than that of either alone. Negligible contributions were made by Pupil Programs and Policies and by Plant and Facilities.

At the sixth-grade level residual achievement was more predictable. The relative contributions of the various sets of variables, as revealed by commonality analysis, were similar to those of non-residual analysis. There was some evidence, however, that school variables might be somewhat more prominent than before.

On the basis of our quasi-longitudinal analysis we suggest the following paradigm. Suppose the nation's elementary schools were to be endowed with a student population that was homogeneous in initial academic ability, but distributed among schools differing in quality of personnel, community environment and so on. Within two or three years, achievement tests would show differences among the schools. But there would also be much doubt about what factors caused the differences. Finally, after about five years, the patterns would become much clearer. We would conclude that student background factors, together with certain school factors, can be influential in the determination of scholastic achievement. However, we would also note that the school personnel factors which correlate positively with achievement tend to be found in association with student home backgrounds that are conducive to high achievement. The relative importance of the two types of factors cannot be determined from a random sample of schools.

9. THE ROLE OF MULTIPLE SCHOOL OUTCOMES

Chapter 4 showed that the School Outcome measures were substantially correlated with one another. Chapter 5 suggested that the influence of the schools on the Outcome measures was bound up with the kinds of students they receive initially. Chapter 6 showed that many of the Outcome measures were substantially correlated with one another even after associations attributable to School Size and Student Body Social Background had been removed through partial correlation techniques.

These results show that schools with a favorable performance on one school outcome tend to have a favorable performance on other school outcomes as well. It is hypothesized that these favorable performances facilitate one another over time. The interrelationships that exist among the outcomes are therefore the result of several years' association. They also result, of course, from interrelationships that were present among the outcomes at some earlier point in time. This chapter attempts to determine the role of multiple School Outcomes in the light of these considerations.

9.1. Selection of the Variables

The thirty-one variable set designated School variables, as well as the set of Student Body Social Background variables, have the same composition in this chapter as in Chapter 5 (pp.127-128). The composition of the third set of variables used in these analyses -- a set we called O_4 -- varies with the dependent variable. For the third, sixth, ninth and twelfth grades the following O sets were used with the following dependent variables:*

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* For definitions of these variables see pp. 113-120.

DEPENDENT VARIABLE	
Achievement	Expectations Attitude Toward Life Educational Plans Study Habits
Study Habits	Expectations Attitude Toward Life Educational Plans Achievement
Educational Plans	Expectations Attitude Toward Life Study Habits Achievement
Attitude Toward Life	Expectations Educational Plans Study Habits Achievement
Expectations	Attitude Toward Life Educational Plans Study Habits Achievement

These sets are called the O_4 sets since for each of the dependent variables the O set includes the four other outcome measures.

At the twelfth grade we conducted analyses using five additional outcome measures: Percent of Graduates Going to College (both Total and Non-White), Percent of Graduates Going on to Post-Secondary Vocational Training (both Total and Non-White), and Percent of Boy Dropouts. For these latter variables two special analyses were run. The first special analysis used as an O set the following set of five outcome measures (O_5):

DEPENDENT VARIABLE	O_5
Percent Total and Non-White to College Percent Total and Non-White to Post-Secondary Vocational Training Percent of Boy Dropouts	Expectations Attitude Toward Life Educational Plans Study Habits Achievement

The O_5 set is the same for each dependent variable; it is therefore called a fixed set.

The second special analysis used the nine other outcome measures at the twelfth grade for each dependent variable. They are therefore designated the O_9 sets. Two examples follow:

DEPENDENT VARIABLE	O_9
Percent to College	Percent Non-White to College Percent to Post-Secondary Training Percent Non-White to Post-Secondary Training Percent Boy Dropouts Expectations Attitude Toward Life Educational Plans Study Habits Achievement
Expectations	Percent to College Percent Non-White to College Percent to Post-Secondary Training Percent Non-White to Post-Secondary Training Percent Boy Dropouts Attitude Toward Life Educational Plans Study Habits Achievement

There are ten of these sets, one for each of the dependent variables at the twelfth grade. The following section develops commonalities for our three sets of variables.

9.2. Development of a Measure of Commonality for B, S, and O

Let B denote the Student Body Background variables, S the set of School variables, and O the set of other Outcome measures. Then the first-order commonality coefficient, or portion of the squared multiple correlation that is uniquely associated with a given dependent variable, is given by:

$$U(B) = R^2(B,S,O) - R^2(S,O)$$

$$U(S) = R^2(B,S,O) - R^2(B,O)$$

$$U(O) = R^2(B,S,O) - R^2(B,S)$$

where

R^2 represents the squared multiple correlation for the particular set of variables in parentheses with the dependent variable.

The second-order commonality coefficients are given by:

$$C(BS) = R^2(B,S,O) - R^2(O) - U(B) - U(S)$$

$$C(BO) = R^2(B,S,O) - R^2(S) - U(B) - U(O)$$

$$C(SO) = R^2(B,S,O) - R^2(B) - U(S) - U(O)$$

The third-order commonality coefficient (there is only one) is given by:

$$C(BSO) = R^2(B,S,O) - R^2(B,S) - R^2(B,O) - R^2(S,O) - U(B) - U(S) - U(O$$

The squared multiple correlation for any single set can then be expressed as a function of its commonality coefficients for each order. For example, $R^2(O)$, which is of course the squared multiple correlation for O, can be expressed as:

$$R^2(O) = C(BSO) + C(BO) + C(SO) + U(O)$$

The basic tabular form used for B, S, and O in these analyses is as follows:

COMMONALITY COEFFICIENTS		SETS OF REGRESSOR VARIABLES		
		B	S	O
First Order	U(B)	XX		
	U(S)		XX	
	U(O)			XX
Second Order	C(BS)	XX	XX	
	C(BO)	XX		XX
	C(SO)		XX	XX
Third Order	C(BSO)	XX	XX	XX
R^2 For A Single Set		$R^2(B)$	$R^2(S)$	$R^2(O)$

The X's in the first column represent the unique portions for B and the amount of predictable variance that is shared with the other sets of variables. The second-order commonality coefficients show the amount of predictable variance that is common to the two sets under consideration. The third-order commonality coefficient shows the amount of predictable variance that is common to all three sets. The unique portions and the commonality coefficient values in each column sum to the squared multiple correlation (R^2) for that set of variables. In the other columns, the values of the commonality coefficients will be the same for the two sets represented in the parentheses. For example, the row for C(BS) will have the same entry in the "B" and in the "S" columns. The tables in the following section starting with Table 9.3.3., give the commonalities for these three sets of variables.

9.3. Regression and Commonality Analyses for B, S, and O

Two main questions are addressed in this section: (1) To what extent can the predictable variance in each outcome measure, as indicated by the squared multiple correlation, be uniquely apportioned to one of the three sets of variables under consideration? (2) To what extent is this predictable variance shared in common by two or more sets of the variables?

Systematic changes in the commonalities at the different grade levels may indicate the extent to which the outcomes facilitate one another. For example, if the Outcomes do operate in a mutually reinforcing way then we would expect them to become more highly intercorrelated over time. Moreover, these higher intercorrelations would be accompanied by an increase in the portion of variance shared by the sets of variables, with a corresponding decrease in the unique portions.

Since many of the indices are sparsely represented at the third grade emphasis will not be given to the third-grade results unless they are in alignment with the other grade levels. The only outcome measure available at the first grade was Achievement. Consequently, these multiple outcome analyses were not conducted for the first grade. Commonality values of less than .01 will not be discussed. As with other chapters, associational language will be used throughout the main body of the chapter and possible causal inferences will be reserved for the Summary.

Before we proceed to the commonality analyses it is pertinent to ask what additional contribution to the prediction of the dependent variable is made by O after B and S have been entered into the regression. A small contribution would suggest that the other Outcomes enter into the prediction mainly through the higher-order commonalities, and a large one that their main contribution is unique. The contribution may be calculated as:

$$R^2(B,S,O) - R^2(B,S)$$

where

$R^2(B,S,O)$ is the squared multiple correlation when all three sets are entered into the regression

$R^2(B,S)$ is the squared multiple correlation when only B and S are entered into the regression

The squared multiple correlations and their differences are given in Tables 9.3.1 and 9.3.2.* Table 9.3.1 gives the squared multiple correlations for B, S, and O at each grade level. The O set in each case includes the four other outcome measures. For example, when Expectations is the dependent variable the O set includes the other outcome measures of Attitude Toward Life, Educational Plans, Study Habits and Achievement. These are the sets called "O_4 sets" in section 9.3.1. The row labeled "DIFFERENCE" for each grade level in this table shows the amount of variance in the dependent variable associated with the O_4 set after the amounts of variance associated with B and S have been accounted for.

Inspection of these values for the different dependent variables shows that there is a substantial increase in predictability associated with the O_4 sets. The values are very much less for Achievement than for the attitudinal and motivational variables of Expectations, Attitude Toward Life, Educational Plans and Study Habits. They tend to diminish slightly at the higher grade levels for Expectations and Educational Plans, increase somewhat at the higher grade levels for Achievement, increase through grade six and then decrease for Attitude Toward Life, and oscillate from low to high and back for Study Habits.

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* The differences are the same as the unique values in the outline table on p. 55.

Table 9.3.1.-Comparison of the Increase in the Squared Multiple Correlations* of B and S When Including O

	Dependent Variable				
Grade Level†	Expectations	Attitude Toward Life	Educational Plans	Study Habits	Achievement
TWELFTH‡					
R^2 (B, S, O)	63	70	73	72	90
R^2 (B, S)	44	56	61	56	86
DIFFERENCE	19	14	12	16	03
NINTH					
R^2 (B, S, O)	80	79	78	87	88
R^2 (B, S)	63	64	67	78	87
DIFFERENCE	17	15	11	09	02
SIXTH					
R^2 (B, S, O)	71	80	73	81	84
R^2 (B, S)	49	58	52	60	83
DIFFERENCE	22	21	21	22	01
THIRD					
R^2 (B, S, O)	47	41	39	61	57
R^2 (B, S)	26	27	21	53	56
DIFFERENCE	20	14	17	07	01

*Rounded to two places of decimals after computation, leading decimal points omitted.

†The number of schools are: Third, 25; Sixth, 24; Ninth, 923; Twelfth, 780.

‡R^2 (B, S, O) is the squared multiple correlation for all three sets, R^2 (B, S) is the squared multiple correlation for the Student Body (B) and School (S) sets. The "O" set in each case includes the four other outcome measures. For example, when Expectations is the dependent variable the "O" set includes Attitude Towards Life, Educational Plans, Study Habits and Achievement.

Table 9.3.2 gives the additional contribution to the dependent variable made by the special twelfth-grade outcome measures of Percent Total and Non-White Going on to College, Percent Total and Non-White Going on to Post-Secondary Vocational Training, and Percent of Boy Dropouts. The top half of the table compares the squared multiple correlations for the B, S and nine other outcome measures (O_9) with the squared multiple correlations for the B, S and five other outcome measures (O_5).* Inspection of the "DIFFERENCE" row in the upper half of this table shows that, except in the case of Boy Dropouts, the special twelfth-grade outcome measures do make an additional contribution to prediction of the dependent variables. This contribution is greatest for the Percent Non-White Going on to College and Post-Secondary Training, and considerably smaller for the Percent of Total Going on to College and Post-Secondary Training.

The bottom half of Table 9.3.2 compares the squared multiple correlations for the B, S, and O_9 with the squared multiple correlations for B, S and O_4. The "DIFFERENCE" row in the bottom half of this table shows that the five special twelfth-grade measures do contribute to the prediction of Expectations and Educational Plans and, though only slightly, to Study Habits. They do not however, improve the prediction of Attitude Toward Life or of Achievement.

Table 9.3.2 shows that O does make a substantial contribution to each of the dependent variables. The next question, then, is to what extent O shares some of the predictable variance with B and S. The commonality analyses in Table 9.3.3 are intended to answer this question. Inspection of this table shows that for each set of variables there is an increase in predictability through the ninth grade and then a decrease at the twelfth grade. The O_9 set at the twelfth grade shows an increase in predictability when compared with the O_4 set. The most prominent feature of this table is that Expectations is more predictable from O than it is from either B or S. Also of interest are the small unique portions for B and S at grades

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* For the composition of O_5 and O_9 see p. 227.

Table 9.3.2.-Comparison of the Increase in the Squared Mutiple Correlations*of B, S, and O When Including the Special Twelfth Grade Measures

	Dependent Variable				
Squared Multiple Correlations†	Percent To College	Percent Non-White To College	Percent To Post-Secondary	Percent Non-White to Post-Secondary	Percent Boy Dropouts
R^2 (B,S,O_9)	67	44	33	44	36
R^2 (B,S,O_5)	65	28	29	27	35
DIFFERENCE	03	16	04	18	01

	Dependent Variable				
	Expectations	Attitude Toward Life	Educational Plans	Study Habits	Achievement
R^2 (B,S,O_9)	66	71	77	73	90
R^2 (B,S,O_4)	63	70	73	72	90
DIFFERENCE	03	00	04	01	00

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*Rounded to two places of decimals after computation, leading decimal points omitted.

†R (B,S,O) is the squared multiple correlation for all three sets. The "O9" set includes the nine other outcome measures at the twelfth grade. For example, when Percent to College is the dependent variable "O9" set includes Percent Non-White to College, Percent Total and Non-White to Post-Secondary Training, Percent of Dropouts, Expectations, Attitude, Educational Plans, Study Habits and Achievement. The "O5" set includes these latter five variables. The "O4" set includes four of the latter five variables where the fifth is the dependent variable. For example, when Expectations is the dependent variable "O4" includes Attitude, Educational Plans, Study Habits and Achievement.

Table 9.3.3. - Squared Multiple Correlations* of B, S, and O for Expectations, Expressed as a Function of Their Unique Association and Their Commonality Coefficients

Commonality Coefficients†		Sets of Regressor Variables														
		B	S	O	B	S	O	B	S	O	B	S	O	B	S	O
First Order	U(B)	02			01			01			02			02		
	U(S)		02			02			05			14			13	
	U(O)			20			22			17			19			22
Second Order	C(BS)				01	01					03	03		02	02	
	C(BO)	17		17	25		25	45		45	05		05	04		04
	C(SO)		01	01		01	01		06	06		11	11		12	12
Third Order	C(BSO)	05	05	05	19	19	19	07	07	07	11	11	11	11	11	11
R^2 for a Single Set of Variables		24	08	43	46	23	66	52	18	74	20	38	45	20	38	50
Grade Level		THIRD			SIXTH			NINTH			TWELFTH (O_4)‡			TWELFTH (O_9)‡		

*Rounded to two places of decimals after computation, leading decimals and zero's omitted.

†The squared multiple correlations obtained when all three sets are entered into the regression for the different grade levels are: Third, 47; Sixth, 71; Ninth, 80; Twelfth (04), 63; Twelfth (09), 66. The number of schools are: Third, 2453; Sixth, 2372; Ninth, 923; Twelth, 780.

‡The "04" designates the four outcome measures of: Attitude Toward Life; Educational Plans; Study Habits; and Achievement. The "09" designates the four variables included in the 04 set _plus_ the additional five measures of Percent Total and Non-White to College, Percent Total and Non-White to Post-Secondary Training and Percent of Boy Dropouts.

three and six. It should be noted that at grades nine and twelve they increase slightly for B and substantially for S. These and other results suggest that O makes a large contribution in the prediction of Expectations, and also shares variance with both B and S.

Table 9.3.4 presents commonalities for Attitude Toward Life. As with Expectations, Attitude Toward Life is more predictable from O than from either B or S. The predictability for each set increases through the ninth grade and then decreases somewhat at the twelfth grade. The special twelfth-grade Outcome measures (O_9) fail to add any information not already contained in the O_4 set. The unique association values for the B and S sets are small but increase slightly at the higher grade levels. The unique portions for O are much larger than for the other unique portions. However, most of the predictable variance in Attitude Toward Life is bound up in the second- and third-order commonality coefficients. There is a progressive increase in the second-order commonality for B and O through the ninth grade, after which it diminishes. The third-order commonality coefficient increases progressively at the higher grade levels. Clearly, in predicting Attitude Toward Life O both makes a large unique contribution and shares an even larger portion of the variance with B and S.

Table 9.3.5 presents the three-set commonality analyses for Educational Plans and Desires. The predictability for each set increases at the higher grade levels and is greatest for O until the ninth grade. After this B takes a slight lead which it retains until the special twelfth-grade measures, O_9, are brought into the analysis. This substantially increases the predictability of O. The unique portion for B and S increases slightly at the higher grade levels, while the O set values diminish somewhat. This trend is altered at the twelfth grade when the special twelfth-grade measures are brought into the analysis. These special measures increase the unique value of O and decrease that of B and S. As with the earlier dependent variables, most of the predictable variance is bound up with the second- and third-order commonalities.

Table 9.3.4. - Squared Multiple Correlations* of B, S, and O for Attitude Toward Life, Expressed as a Function of Their Unique Association and Their Commonality Coefficients

Commonality Coefficients†		Sets of Regressor Variables														
		B	S	O	B	S	O	B	S	O	B	S	O	B	S	O
First Order	U(B)	04			01			01			04			03		
	U(S)		06			01			02			04			03	
	U(O)			14			21			15			14			15
Second Order	C(BS)	01	01					01	01		04	04		03	03	
	C(BO)	15		15	28		28	28		28	10		10	10		10
	C(SO)					01	01		03	03		04	04		04	04
Third Order	C(BSO)	03	03	03	28	28	28	29	29	29	31	31	31	31	31	31
R^2 for a Single Set of Variables		22	09	30	57	30	78	58	35	75	48	42	59	48	42	60
Grade Level			THIRD			SIXTH			NINTH			TWELFTH (O_4)‡			TWELFTH (O_9)‡	

*Rounded to two places of decimals after computation, leading decimals and zero's omitted.

†The squared multiple correlations obtained when all three sets are entered into the regression for the different grade levels are: Third, 41; Sixth, 80; Ninth, 79; Twelfth (O_4), 70; Twelfth (O_9), 71. The number of schools are: Third, 2453; Sixth, 2372; Ninth, 923; Twelfth, 780.

‡The "O_4" designates the four outcome measures of: Expectations, Educational Plans; Study Habits; and Achievement. The "O_9" designates the four variables included in the O_4 set plus Percent Total and Non-White to College, Percent Total and Non-White to Post-Secondary Training and Percent of Boy Dropouts.

Table 9.3.5. - Squared Multiple Correlations* of B, S, and O for Educational Plans and Desires, Expressed as a Function of Their Unique Association and Their Commonality Coefficients

		Sets of Regressor Variables														
Commonality Coefficients†		B	S	O	B	S	O	B	S	O	B	S	O	B	S	O
First Order	U(B)				01			07			07			04		
	U(S)		02			02			05			08			05	
	U(O)			17			21			11			12			15
Second Order	C(BS)				02	02		08	08		14	14		07	07	
	C(BO)	07		07	19		19	26		26	13		13	15		15
	C(SO)								02	02		06	06		10	10
Third Order	C(BSO)	12	12	12	28	28	28	19	19	19	13	13	13	20	20	20
R^2 for a Single Set of Variables		19	15	36	50	33	68	61	33	58	47	42	44	47	42	61
Grade Level			THIRD			SIXTH			NINTH			TWELFTH (O_4)‡			TWELFTH (O_9)‡	

*Rounded to two places of decimals after computation, leading decimals and zero's omitted.

†The squared multiple correlations obtained when all three sets are entered into the regression for the different grade levels are: Third, 29; Sixth, 73; Ninth, 78; Twelfth (O_4), 73; Twelfth(O_9), 77. The number of schools are Third, 2453; Sixth, 2372; Ninth, 923; Twelfth, 780.

‡The "O_4" designates the four outcome measures of: Expectations; Attitude Toward Life; Study Habits; and Achievement. The "O_9" designates the four variables included in the "O_4" set plus Percent Total and Non-White to College, Percent Total and Non-White to Post-Secondary Training and Percent of Boy Dropouts.

A slightly different trend emerges for the second-order commonalities, which are somewhat larger for B and S than for the earlier measures. However, most of the predictable variance is still bound up with the second-order commonality for B and O and with the third-order commonality. The second-order commonality, C(BO), increases in value at the sixth and ninth grades, while the third-order commonality increases at the sixth grade and then progressively diminishes. As before, this trend is altered at the twelfth grade when the special twelfth-grade measures, O_9, are brought into the analysis. Here, the second-order commonalities for BO and SO are increased, as is the third order commonality. The commonality trends for Educational Plans indicate a large unique contribution and a large portion of shared variance of the B and S sets with O. In this they resemble the trends observed for the earlier dependent variables.

Table 9.3.6 presents commonality analyses for Study Habits. The predictability of Study Habits varies with the grade level and set under consideration. For example, the squared multiple correlation for S decreases at the higher grade levels, but increases through grade nine for B and O, and then decreases at grade twelve. The unique associations for B and S increase at the higher grade levels, while those for O oscillate from low to high and back again. The second-order commonality increases through the ninth grade and then decreases, The third-order commonality, on the other hand, progressively decreases from the third grade on. The most important trend in this table is for the three sets to share less of the variance while the two-set combinations and the unique contributions increase in magnitude.

Commonality analyses for Achievement are presented in Table 9.3.7. The picture that emerges here is very different from that given by the earlier dependent variables. Although for each individual set the squared multiple correlation increases at the higher grade levels, it is always less for O than for B and S. The unique portions are larger for B than for the other sets. The unique portions for S remain fairly similar from one grade level to the next, while those for O increase slightly at the higher grade levels. Most of

Table 9.3.6 - Squared Multiple Correlations* of B, S, and O for Study Habits, Expressed as a Function of Their Unique Association and Their Commonality Coefficients

Sets of Regressor Variables

Commonality Coefficients†		B	S	O	B	S	O	B	S	O	B	S	O	B	S	O
First Order	U(B)	04			01			09			18			19		
	U(S)		04			01			02			08			09	
	U(O)			07			22			09			16			17
Second Order	C(BS)	06	06								02	02		-02	-02	
	C(BO)	12		12	30		30	49		49	22		22	22		22
	C(SO)		01	01		01	01		02	02		06	06		06	06
Third Order	C(BSO)	26	26	26	26	26	26	16	16	16	03	03	03	04	04	04
R^2 for a Single Set of Variables		49	36	46	57	28	79	74	20	76	42	16	48	42	16	48
Grade Level			THIRD			SIXTH			NINTH			TWELFTH (O_4)‡			TWELFTH (O_9)‡	

*Rounded to two places of decimals after computation, leading decimals and zero's omitted.

†The squared multiple correlations obtained when all three sets are entered into the regression for the different grade levels are: Third, 61; Sixth, 81; Ninth, 87; Twelfth (O_4), 72; Twelfth (O_9) , 73. The number of schools are: Third, 2453; Sixth, 2372; Ninth, 923, Twelfth, 780.

‡The "O_4" designates the four outcome measures of: Expectations; Attitude Toward Life; Educational Plans; and Achievement. The "O_9" designates the four variables included in the "O_4" set plus Percent Total and Non-White to College, Percent Total and Non-White to Post-Secondary Training and Percent Boy Dropouts.

Table 9.3.7. - Squared Multiple Correlations* of B, S, and O for Achievement, Expressed as a Function of Their Unique Association and Their Commonality Coefficients

		Sets of Regressor Variables														
Commonality Coefficients†		B	S	O	B	S	O	B	S	O	B	S	O	B	S	O
First Order	U(B)	05			06			07			05			05		
	U(S)		04			04			03			03			03	
	U(O)			01			01			02			03			04
Second Order	C(BS)	19	19		30	30		27	27		24	24		17	17	
	C(BO)	02		02	04		04	04		04	02		02	02		02
	C(SO)					01	01		02	02		01	01		01	01
Third Order	C(BSO)	26	26	26	39	39	39	45	45	45	51	51	51	58	58	58
R^2 for a Single Set of Variables		53	49	29	79	73	45	82	76	52	82	79	57	82	79	65
Grade Level		THIRD			SIXTH			NINTH			TWELFTH (O_4)‡			TWELFTH (O_9)‡		

*Rounded to two places of decimals after computation, leading decimals and zero's **omitted.**

†The squared multiple correlations obtained when all three sets are entered into the regression for the different grade levels are: Third, 57; Sixth, 84; Ninth, 88; Twelfth (O_4), 90; Twelfth (O_9), 90. The number of schools are: Third, 2453; Sixth, 2372; Ninth, 923; Twelfth, 780.

‡The "O_4" designates the four outcome measures of: Expectations; Attitude Toward Life; Educational Plans; and Study Habits. The "O_9" designates the four variables included in the "O_4" set plus Percent Total and Non-White to College, Percent Total and Non-White to Post-Secondary Training and Percent Boy Dropouts.

the predictable variance is contained in the second-order commonality for B and S and in the third-order commonality. The second-order commonality for B and S increases through the sixth grade and then diminishes slightly. When O_9 is brought into the analysis, this coefficient decreases somewhat. The third-order commonality contains most of the predictable variance in Achievement; it increases in magnitude at the higher grade levels. The O_9 set increases the third-order coefficient when it is brought into the analysis. These results show that the greatest amounts of predictable variance are shared by B and S in combination with O, as well as in combination with one another. The three sets do make unique contributions, but the magnitudes are rather small.

Table 9.3.8 presents commonality analyses for the special twelfth-grade measures. By far the largest percent of the predictable variance in Percent of Graduates Going on to College is contained in the third-order commonality coefficient. The S and O sets have moderate unique portions, while the unique portion for B is near zero. Commonality coefficients appear at the second order for BO and SO. Unlike Achievement, Percent Going on to College is more predictable from O than from B and S. These results show that O and S make unique contributions in predicting the Percent Going on to College, but that the greatest contribution is made by the combination of B, S, and O.

For Percent Non-White Going on to College the squared multiple correlation is largest for O and next largest for S. The value for B is very small. Most of the predictable variance is contained in the unique portions and second-order commonality for S and O. A small amount is contained in the third-order commonality. These results show that it is the unique portions of S and O, combined with a slight shared variance, that accounts for most of the predictable variance in Percent Non-White Going on to College.

Most of the predictable variance in Percent Going on to Post-Secondary Vocational Training is accounted for by the unique association of S. There is also a small unique portion of O. The higher-order common-

Table 9.3.8. - Squared Multiple Correlations* of B, S, and O for Special Twelfth Grade Outcome Measures, Expressed as a Function of Their Unique Association and Their Commonality Coefficients

Commonality Coefficients†		Sets of Regressor Variables														
		B	S	O	B	S	O	B	S	O	B	S	O	B	S	O
First Order	U(B)	01			01			01			01			03		
	U(S)		10			11			23			11			20	
	U(O)			10			21			06			20			02
Second Order	C(BS)										01	01		-02	-02	
	C(BO)	05		05	01		01									
	C(SO)		09	09		07	07		03	03		08	08		04	04
Third Order	C(BSO)	32	32	32	02	02	02	01	01	01	02	02	02	09	09	09
R^2 for a Single Set of Variables		38	51	56	05	20	32	02	26	09	05	23	31	10	32	15
Dependent Variable		**Percent To College**			**Percent Non-White to College**			**Percent to Post-Secondary Training**			**Percent Non-White to Post-Secondary Training**			**Percent Boy Dropouts**		

*Rounded to two places of **decimals** after computation, leading decimals and zero's omitted.

†The "O" set contains the nine other outcome measures. For example, when Percent to College is the dependent variable the "O" **set** contains Percent Non-White to College, Percent Total and Non-White to Secondary Training, Percent Boy Dropouts, Expectations, Attitude, Educational Plans, Study Habits and Achievement. The squared multiple correlation obtained when all three sets are entered into the regression are: Percent to College, 67; Percent Non-White to College, 44; Percent to Post-Secondary Training, 33; Percent Non-White to Post-Secondary Training, 44; Percent Boy Dropouts, 36. There were 780 schools in these analyses.

alities are near zero except for the S and O combination. A small portion of the variance is shared by S with O. Nevertheless, most of the differences among schools in their Percent of Graduates Going on to Post-Secondary Training can be accounted for by S.

For Percent Non-White Going on to Post-Secondary Training the trend is very comparable to Percent Non-White Going on to College, and the same kinds of remarks would be applicable.

The highest squared multiple correlation for the Percent of Boy Dropouts is with S. The values for B and O are much lower and closer together. Most of the predictable variance is accounted for by the unique portion of S, and the slight shared variance of S and O, and the larger portion of variance shared by all three sets. Clearly, S makes a large contribution to differences among schools in their dropout rates.

Regression and commonality analyses were conducted using B, S, and O with the dependent variables of: Expectations, Attitude Toward Life, Educational Plans and Desires, Study Habits, and Achievement. Use was also made of the additional twelfth-grade dependent variables of Percent Total and Non-White Graduates Going on to College, Percent Total and Non-White Graduates Going on to Post-Secondary Vocational Training, and the Percent of Boy Dropouts.

To make causal inferences from this associational data we will make the same kinds of assumptions as in Chapter 5. It was assumed there that some degree of proportionality existed between: (i) the percent of variance that could be apportioned to a set of variables independently of other sets; (ii) the causal influence of that set. This was called the set's "independent role or contribution"; it was contrasted with "common role or contribution" (see p. 168).

The relative roles of the sets of variables used in a regression analysis can vary markedly. If sets X and Y have similar correlations with the dependent variable, and if the correlation of X with Y is high, then the unique contribution of each set will be small and the degree of overlap or commonality coefficient will be large. The effect is strengthened if the correlations within each set are also similar. The magnitude of the commonality will depend upon the magnitude of the correlations within and between the X and Y sets, as well as on the magnitude of their correlations with the dependent variables. When a third set, Z, is introduced which is more highly correlated with one set than with the other, the relative roles of the X and Y sets (viz. the uniques and the commonality) will change in order to accomodate this new set. If Z has variance which is shared with (let us say) X, and has similar dependent variable correlations, then the unique contribution of X will decrease in order to emerge as a second-order commonality with Z. What was formerly called a unique cause can still be causal, but the causation is now shared by the two sets. Similarly, if the new set, Z, has variance in common with X and Y, and if all three have similar dependent variable correlations, then this common variance will emerge in the third-order commonality. Also, if the two sets, X and Y, do not have much variance in common with Z, then their second-order commonality will be similar to what it was before Z was introduced.*

With these considerations in mind, let us proceed to the causal inferences. They will be organized around the different individual outcome measures, but will also emphasize major trends common to two or more individual outcome measures.

The set of Outcome measures (O) for each dependent variable (i.e. each individual outcome) was found to make substantial independent contributions to the dependent variable after the Student Body Background (B) and School (S) sets had been entered into the regression. These contributions were much larger for Expectations, Attitude Toward Life, Educational Plans and Desires, and Study Habits than for Achievement. For Expectations, as well as Educational Plans and Desires, the contribution of O was somewhat smaller at the higher than at the lower grades. For Attitude Toward Life, the contribution increased through the sixth grade, and then decreased. For Study Habits the contribution oscillated from low to high and back again in moving from the lower to the higher grade levels. For Achievement the other Outcome measures made a very small independent contribution that increased progressively at the higher grade levels. When the special twelfth-grade measures were brought into the analysis they made slight to substantial contributions to all the dependent variables except Percent of Boy Dropouts, Attitude Toward Life, and Achievement.

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* These relationships are further discussed in Appendix II.

Commonality analyses showed that the attitudinal and motivational measures had similar trends over the grade levels. Each of the four dependent variables of Expectations, Attitude Toward Life, Educational Plans, and Study Habits tended to be more predictable from O than from B or S. For each of these variables the Outcome measures had moderate-to-large independent roles that were almost always larger than the independent role for B and S. However, most of the contributions to these dependent variables was made by the two-way common role of B and O and by the three-way common role of B, S, and O.

A somewhat different picture emerges for Achievement, which was most predictable from B, somewhat predictable from S, and least predictable from O (although the level of predictability here was still substantial). The independent contribution was greatest for the Student Body variables. The contribution of O increased at the higher grade levels while the contribution of S declined somewhat. Both, however, were fairly close in magnitude at grades nine and twelve. As with the other dependent variables, most of the contribution to Achievement lay in the common role of O and S. In contrast, the two-way combination that may wield the greatest influence was that of B with S. An even greater influence may be wielded by the three-way combination of B, S and O. The common role of the three sets combined outweighed the lower-order contributions. Thus at the third grade the influence of this three-way combination was about one and one-half times as great as the largest value for the lower-order commonalities. By the twelfth grade its influence was about three times as great as the largest lower-order commonality.

There was a moderate independent contribution of S and O for the special twelfth-grade dependent variable of Percent Going on to College. A common contribution was also made by these sets in the second order. Most of the contribution, however, was made by the three-way combination of B, S and O. For the other special twelfth-grade dependent variables the common roles for the two- and three-set combinations were much smaller. The greatest roles were played by the independent contributions of the different sets. For Percent Non-White Going on to College, and for Percent Non-White Going on to Post-Secondary Vocational Training, the largest independent contributions were made by O and S. These sets also had a two-way common contribution and a slight three-way contribution with B. For the Percent of Total Going on to Post-Secondary Training the largest contribution was made by S, with O making a small independent contribution. The greatest role in Percent Going on to Post-Secondary Training was played by these independent contributions; the common role of S and O was only a small one. For Percent of Boy Dropouts the largest contribution, which happened to be independent, was made by B. A common role was shared not only by S and O but (to an ever greater extent) by B, S and O.

We have seen that O played a significant role -- independent, cooperative, and both -- in contributing to individual school outcomes. These results show that schools that do well on one school outcome tend also to do well on others. They also show that these outcomes may be bound up with the students' social background, as we have defined it, and that these multiple outcomes may be mutually reinforcing and facilitating. We cannot build a particularly conclusive case for the latter part of this assertion. But the results are suggestive. In order to demonstrate more conclusively that multiple school outcomes are mutually reinforcing, we would like to show that the internal intercorrelations of the B and S sets of variables, as well as their correlations with each other, remain fairly stable over the grade levels. On the other hand, the correlations of B and S with the individual outcomes increase as one ascends the grade levels. These conditions would give strong support to the assertion that the schools are having an influence on the students that is bound up with their social background. If in addition we could show that the School Outcome measures become more highly intercorrelated as one ascends the grade levels, then this trend would more strongly support the notion that multiple School Outcomes are mutually reinforcing.

Inspection of the intercorrelations of the outcome measures at the different grade levels in Tables 5.2.1 and 5.2.2 shows that these trends do not occur exactly in the manner expected. The intercorrelations do increase from grades three to six. But then they decline again, especially at grade twelve. Can these trends be demonstrated? It appears that, for a number of reasons, they cannot. Sparse representation of the indices at the lower grade levels, higher non-response rates at these same levels,* unreliability of the responses of younger students† -- all these factors combine to prevent it. Other such factors are that students of more dissimilar backgrounds tend to be aggregated into schools at the higher grade levels, and that dropouts start occurring at the higher grade levels. Because of these countertrends we can only conclude that these outcomes may be mutually reinforcing.

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* Because students and teachers know less about parents' occupation and education.

† Because their attitudes are less well developed and articulated.

10. FURTHER ANALYSIS OF SCHOOL PERSONNEL AND PERSONNEL EXPENDITURES

10.1. Selection of Subsets

We have seen that the set of variables most heavily involved in school outcomes is School Personnel and Personnel Expenditures (pp. 150-168). It has also been suggested that the influence of the schools is bound up with the kinds of students they get initially, and that very little of this influence can be attributed to them independently of their students' social background, as we have defined it (p. 128). In this chapter, we shall attempt to find out if, among the seventeen variables that make up School Personnel and Personnel Expenditures, some subsets are more influential than others. In addition, ten other personnel variables have been brought into the analysis. These are designated below by an asterisk. Variables related to personnel expenditures -- specialized personnel services, for instance, or training and credits beyond the highest degree -- have been brought together in an attempt at determining to what extent they had a unique portion, and to what extent a shared portion, of variance with the other sets in predicting school outcomes. This particular subset is as follows:

F: FISCAL (EXPENDITURE-RELATED) VARIABLES

(1) Principal's Training
(2) Specialized Staff and Services
(3) Principal's Credits Beyond Higest Degree*
(4) Teacher's Training
(5) Teacher's Credits Beyond Highest Degree*

Two other subsets were formed. These referred primarily to the school personnel's prior background and current teaching situation. It was felt that the personnel expenditure variables might have variance in common with either. For example, if expenditure variables were strongly related to school outcomes and to the kind of college attended by the teachers, then we would expect a large second order commonality coefficient for these two sets of variables.

P: PERSONNEL'S BACKGROUND (INCLUDING COLLEGE ATTENDED)

(1) Principal's Experience
(2) Principal's College Attended
(3) Principal's Sex - Male or Female
(4) Teacher's Experience
(5) Teacher's Localism - Number of Areas ever Served
(6) Teacher's Socio-Economic Background
(7) Teacher's College Attended
(8) Teacher's Sex - Male or Female
(9) Teacher's Racial-Ethnic Group Membership
(10) Percent of White Students at Teacher's Undergraduate Institution*
(11) Teacher's Vocabulary Score

T: TEACHING SITUATION

(1) Principal's Estimate of the Scope and Severity of School Problems* (destruction of property, stealing, racial tension, etc.)
(2) Principal's Estimate of the School's Reputation
(3) Teacher Turnover*
(4) Teacher Tenure*
(5) Teacher Exams* (i.e., use of teacher exams in the appointment process)
(6) Teaching Conditions
(7) Teaching-Related Activities
(8) Teacher's Preference for Student Ability Level
(9) Percent White of Teacher's Students*
(10) Teacher's Assignment to Present School District*
(11) Number of Hours per Day Spent in Classroom Teaching*

The outcome measures were the same as those used above (p.127).

10.1.1. Commonality Analyses for B, F, P, and T

Student Body Social Background has already been designated as B. This section presents the results of commonality and regression analyses for B, F, P, and T. The main questions with which we are concerned here are:

(1) To what extent can the predictable variance in School Outcomes (as indicated by the squared multiple correlation) be uniquely apportioned to our sets of personnel variables?

(2) To what extent is this predictable variance shared by different combinations of these sets of variables?

Emphasis will not be given to results at the third grade unless they are in alignment with the other grade levels. This is because the outcome indices, except for Achievement, tend to be sparsely represented at the third grade. For similar reasons, commonality coefficients of .01 or less will not be discussed.

Table 10.1 1.1 shows that the predictability of Expectations for Excellence (p.252-3) from each set of variables, except for B at the twelfth grade, increases for the higher grade level. The unique portion of the association for F, P, and T increases at the higher grade levels, while the unique portion for B increases through the ninth grade and drops sharply at the twelfth grade. The role played by F in Expectations, either individually or in combination with the other sets of variables, is very small. Second-order commonalities do emerge at the ninth and twelfth grade for F in conjunction with P and T, but they are slight.

In Table 10.1.1.2 the same analyses are performed with the same variables for Attitude Toward Life (p.254-5). As with Expectations, the higher the grade level, the greater the predictability from each of the four sets of variables. However, the predictability from B drops at the twelfth grade, and the unique portions for F, P, and T increases only slightly at the higher grade levels. In contrast, the unique portion of the association for B increases progressively through the ninth grade. But at the twelfth grade it drops sharply. As for F, the second-, third-, and fourth-order commonalities show that it has virtually no variance in common with the other sets of variables. Among these, most of the predictable variance in P and T is contained in the second- and third-order commonalities, and is shared with B. It is largest for the third-order commonality coefficient involving B, P and T.

The next outcome measure in our analysis is Educational Plans and Desires (Table 10.1.1.3). Its predictability

Table 10.1.1.1. - Squared Multiple Correlations* of B, F, P, and T With Expectations, Expressed as a Function of their Unique Association and Their Commonality Coefficients

Sets of Regressor Variables

Commonality Coefficients†		B	F	P	T	B	F	P	T
First Order	U(B)	18				27			
	U(F)								
	U(P)			01				01	
	U(T)				01				01
Second Second Order	C(BF)								
	C(BP)					02		02	
	C(BT)	01			01	03			03
	C(FP)								
	C(FT)								
	C(PT)								
Third Order	C(BFP)								
	C(BFT)								
	C(BPT)	03		03	03	15		15	15
	C(FPT)								
Fourth Order	C(BFPT)								
R^2 for a Single Set of Variables		24	01	04	06	46		18	19
Grade Level		THIRD				SIXTH			

*Rounded to two places of decimals after computation, leading decimals and zeros omitted.

†The squared multiple correlations obtained when all four sets are entered into the regression for the different grade levels are: Third, 26 and Sixth, 49. The number of schools are: Third, 2,453 and Sixth, 2,372.

Table 10.1.1.1. (Cont')

Sets of Regressor Variables

Commonality Coefficients†		B	F	P	T	B	F	P	T
First Order	U(B)	42				07			
	U(F)		01				03		
	U(P)			03				06	
	U(T)				01				07
Second Order	C(BF)								
	C(BP)	02		02					
	C(BT)	12			12	03			03
	C(FP)		01	01					
	C(FT)		01		01		04		04
	C(PT)							01	01
Third Order	C(BFP)	-01	-01	-01		02	02	02	
	C(BFT)	01	01		01	-02	-02		-02
	C(BPT)	-02		-02	-02	09		09	09
	C(FPT)		01	01	01		-01	-01	-01
Fourth Order	C(BFPT)	-02	-02	-02	-02	01	01	01	01
R^2 for a Single Set of Variables		52	03	03	13	20	07	18	21
Grade Level		NINTH				TWELFTH			

*Rounded to two places of decimals after computation, leading decimals and zeros omitted.

†The squared multiple correlations obtained when all four sets are entered into the regression for the different grade levels are: Ninth, 61 and Twelfth, 39. The number of Schools are: Ninth, 923 and Twelfth, 780.

Table 10.1.1.2. - Squared Multiple Correlations* of B, F, P, and T With Attitude Toward Life, Expressed as a Function of Their Unique Association and Their Commonality Coefficients

Commonality Coefficients†		Sets of Regressor Variables							
		B	F	P	T	B	F	P	T
First Order	U(B)	19				29			
	U(F)								
	U(P)			02				01	
	U(T)				01				01
Second Order	C(BF)								
	C(PB)	-02		-01		03		03	
	C(BT)	02			02	03			03
	C(FP)								
	C(FT)								
	C(PT)			01	01				
Third Order	C(BFP)								
	C(BFT)								
	C(BPT)	01		01		20		20	20
	C(FPT)								
Fourth Order	C(BFPT)					01	01	01	01
R^2 for a Single Set of Variables		22	01	04	06	57	01	25	25
Grade Level		THIRD				SIXTH			

*Rounded to two places of decimals after computation, leading decimals and zeroes omitted.

†The squared multiple correlations obtained when all four sets are entered into the regression for the different levels are: Third, 27; Sixth, 59; Ninth, 63; Twelfth, 55. The number of schools are: Third, 2,453; Sixth, 2,372; Ninth, 923; Twelfth, 780.

Table 10.1.1.2. - (continued)

		Sets of Regressor Variables							
Commonality Coefficients†		B	F	P	T	B	F	P	T
First Order	U(B)	31				12			
	U(F)						01		
	U(P)			01				01	
	U(T)				02				03
Second Order	C(BF)								
	C(BP)	01		01		03		03	
	C(BT)	06			06	05			05
	C(FP)						01	01	
	C(FT)								
	C(PT)								
Third Order	C(BFP)								
	C(BFT)	01	01		01				
	C(BPT)	20		20	20	29		29	29
	C(FPT)								
Fourth Order	C(BFPT)								
R^2 for a Single Set of Variables		58	02	23	29	48	02	34	37
Grade Level		NINTH				TWELFTH			

*Rounded to two places of decimals after computation, leading decimals and zeros omitted.

†The squared multiple correlations obtained when all four sets are entered into the regression for the different levels are: Third, 27; Sixth, 59; Ninth, 63; Twelfth, 55. The number of schools are: Third, 2,453; Sixth, 2,372; Ninth, 923; Twelfth, 780.

varies somewhat for each set of variables as one ascends the grade levels (see R^2 for a single set of variables). For F and T there is an increase in the R^2 at the higher grade levels. The increase in B, however, gives way to a decrease at the twelfth grade. P increases only through the sixth grade; at the ninth grade it decreases, as it does again at the twelfth grade. The unique portions increase for F, P, and T at the higher grades, while the unique portion for B increases through the ninth grade and then decreases at the twelfth. At the ninth and twelfth grades, a slight commonality coefficient can be discerned for F in conjunction with B, and for F in conjunction with B and P at the sixth and ninth grades. However, most of the predictable variance in Educational Plans is contained in the second- and third-order commonalities for B, P, and T at grades six, nine and twelve. Between the sixth and the ninth, and the ninth and the twelfth grades the predictable variance shifts in a curious fashion from the third-order commonality for B, P, and T to the second order commonality for B and T. Evidently, at grades six and nine B and T assume a greater role, while that of P decreases. A small amount of the predictable variance in Educational Plans is shared by all four sets of variables at the sixth and ninth grades. This can be seen from their fourth-order commonality coefficients.

The predictability of Study Habits (Table 10.1.1.4) for each set of variables (see R^2 for a single set of variables) varies with the grade level. B increases through grade nine and then decreases at grade twelve. P and T decrease at the higher grade levels. F, after starting out low, remains low even at these levels. The unique portions for B increase slightly at the higher grade levels. The higher-order commonalities for F are negligible; very small coefficients appear at the twelfth grade in conjunction with P at the second order, and with B and T at the third order.

Most of the predictable variance in Study Habits is in the unique portions at the higher grade levels, and in the second- and third-order commonality coefficients of B, P, and T at grades three, six and nine. These results suggest that F may play a slight but independent role in Study Habits at the twelfth grade. However, most of the predictable variance is accounted for by (1) the unique portion for B; (2) the shared variance of P and T with B.

The squared multiple correlations of B, F, P and T

Table 10.1.1.3. - Squared Multiple Correlations* of B, F, P, and T With Educational Plans and Desires, Expressed as a Function of Their Unique Association and Their Commonality Coefficients

Commonality Coefficients†		Sets of Regressor Variables							
		B	F	P	T	B	F	P	T
First Order	U(B)	07				21			
	U(F)						01		
	U(P)			01				01	
	U(T)				02				
Second Order	C(BF)					01	01		
	C(BP)					04		04	
	C(BT)	04			04	07			07
	C(FP)								
	C(FT)								
	C(PT)								
Third Order	C(BFP)					01	01	01	
	C(BFT)					01	01		01
	C(BPT)	07		07	07	14		14	14
	C(FPT)								
Fourth Order	C(BFPT)	01	01	01	01	02	02	02	02
R^2 for a Single Set of Variables		19	02	08	13	50	06	21	24
Grade Level		THIRD				SIXTH			

---

*Rounded to two places of decimals after computation, leading decimals and zeros omitted.

†The squared multiple correlations obtained when all four sets are entered into the regression for the different grade levels are: Third, 21 and Sixth, 52. The number of schools are: Third, 2,452 and Sixth 2,372.

Table 10.1 1.3. - (continued)

Commanality Coefficients[†]		Sets of Regressor Variables							
		B	F	P	T	B	F	P	T
First Order	U(B)	37				16			
	U(F)						01		
	U(P)			02				03	
	U(T)				02				09
Second Order	C(BF)	02	02			04	04		
	C(BP)	01		01		02		02	
	C(BT)	13			13	24			24
	C(FP)								
	C(FT)						02		02
	C(PT)			01	01			01	01
Third Order	C(BFP)	02	02	02		-01	-01	-01	
	C(BFT)					01	01		01
	C(BPT)	04		04	04	01		01	01
	C(FPT)						01	01	01
Fourth Order	C(BFPT)	03	03	03	03				
R for a Single Set of Variables		61	08	11	22	47	08	06	37
Grade Level		NINTH				TWELFTH			

*Rounded to two places of decimals after computation, leading decimals and zeros omitted.

†The squared multiple correlations obtained when all four sets are entered into the regression for the different grade levels are: Ninth, 66 and Twelfth, 62. The number of schools are: Ninth, 923 and Twelfth, 780.

Table 10.1.1.4. - Squared Multiple Correlations* of B, F, P, and T With Study Habits, Expressed as a Function of Their Unique Association and Their Commonality Coefficients

Commonality Coefficients†		Sets of Regressor Variables							
		B	F	P	T	B	F	P	T
First Order	U(B)	16				33			
	U(F)		01						
	U(P)			01				01	
	U(T)								01
Second Order	C(BF)	01	01						
	C(BP)	02		02		03		03	
	C(BT)	06			06	04			04
	C(FP)								
	C(FT)								
	C(PT)								
Third Order	C(BFP)	01	01	01					
	C(BFT)								
	C(BPT)	20		20	20	16		16	16
	C(FPT)								
Fourth Order	C(BFPT)	02	02	02	02	01	01	01	01
R^2 for a Single Set of Variables		49	06	26	30	57	02	21	22
Grade Level		THIRD				SIXTH			

*Rounded to two places of decimals after computation, leading decimals and zeros omitted.

† The squared multiple correlations obtained when all four sets are entered into the regression for the different grade levels are: Third, 52 and Sixth, 60. The number of schools are: Third, 2,453 and Sixth, 2,372.

Table 10.1.1.4. - (continued)

		Sets of Regressor Variables							
Commonality Coefficients†		B	F	P	T	B	F	P	T
First Order	U(B)	58				39			
	U(F)						03		
	U(P)			02				03	
	U(T)				01				02
Second Order	C(BF)					-02	-02		
	C(BP)								
	C(BT)	06			06	03			03
	C(FP)						01	01	
	C(FT)						-01		-01
	C(PT)							01	01
Third Order	C(BFP)								
	C(BFT)	01	01		01	01	01		01
	C(BPT)	08		08	08	01		01	01
	C(FPT)								
Fourth Order	C(BFPT)	01	01	01	01				
R^2 for a Single Set of Variables		74	02	11	16	42	02	06	07
Grade Level		NINTH				TWELFTH			

*Rounded to two places of decimals after computation, leading decimals and zeros omitted.

† The squared multiple correlations obtained when all four sets are entered into the regression for the different grade levels are: Ninth, 77 and Twelfth, 51. The number of schools are: Ninth, 923 and Twelfth, 780.

Table 10.1.1.5. - Squared Multiple Correlations* of B, F, P, and T With Achievement, Expressed as a Function of Their Unique Association and Their Commonality Coefficients

		Sets of Regressor Variables							
Commonality Coefficients†		B	F	P	T	B	F	P	T
First Order	U(B)	05				07			
	U(F)						01		
	U(P)			03				02	
	U(T)				04				02
Second Order	C(BF)					01	01		
	C(BP)	01		01		14		14	
	C(BT)	10			10	02			02
	C(FP)								
	C(FT)								
	C(PT)								
Third Order	C(BFP)								
	C(BFT)					01	01		01
	C(BPT)	25		25	25	25		25	25
	C(FPT)								
Fourth Order	C(BFPT)	01	01	01	01	02	02	02	02
R^2 for a Single Set of Variables		43	03	30	40	53	05	43	32
Grade Level		FIRST				THIRD			

---

*Rounded to two places of decimals after computation, leading decimals and zeros omitted.

†The squared multiple correlations obtained when all four sets are entered into the regression for the different grade levels are: First, 50 and Third, 56. The number of schools are: First, 1,302 and Third, 2,453.

Table 10.1.1.5. - (continued)

Sets of Regressor Variables

Commonality Coefficients†		B	F	P	T	B	F	P	T	B	F	P	T
-													
First Order	U(B)	09				09				04			
	U(F)										01		
	U(P)			02				01				01	
	U(T)				01				01				03
Second Order	C(BF)	01	01				02			04	04		
	C(BP)	05		05		05		05		01		01	
	C(BT)	13			13	10			10	12			12
	C(FP)												
	C(FT)										-01		-01
	C(PT)												
Third Order	C(BFP)	01	01	01		04	04	04		02	02	02	
	C(BFT)	01	01		01	-01	-01		-01				
	C(BPT)	47		47	47	49		49	49	59		59	59
	C(FPT)												
Fourth Order	C(BFPT)	02	02	02	02	05	05	05	05				
R^2 for a Single Set of Variables		79	05	57	63	83	11	64	64	82	06	63	73
Grade Level		SIXTH				NINTH				TWELFTH			

*Rounded to two places of decimals after computation, leading decimals and zeros omitted.

†The squared multiple correlations obtained when all four sets are entered into the regression for the different grade levels are: Sixth, 82; Ninth, 86; and Twelfth, 87. The number of schools are: Sixth, 2,372 Ninth, 923; and Twelfth, 780.

with Achievement show a progressive increase at the higher grade levels (Table 10.1.1.5). But this increase lasts only as far as the ninth grade for F. The unique portions are small for all the personnel variables, especially F, while the unique portions for B increase progressively through the ninth grade and then decrease at the twelfth grade. F shares some variance with B at the second order, and with B and P at the third order, for the ninth and twelfth grades. But in Achievement, as with the preceding outcome measures, most of the predictable variance is contained in the second- and third-order commonality coefficients for B, P, and T. Some variance is also common to all four sets for grades one through nine. These results suggest that P and T may play a large role in the development of Achievement through their shared variance with B. A somewhat smaller role may be played by F through its common variance with B and P.

The five special twelfth grade outcome measures (p. 264-5) present a rather diversified picture in conjunction with our four sets of variables (Table 10.1.1.6). Percent Going on to College is moderately predictable from T and B, less so from P, and much less so from F. The unique associations are largest for T, next largest for B and P, and near zero for F. In fact, F has a very low commonality with T at the second-order and with all three other sets at the fourth-order. However, most of the predictable variance in Percent Going to College is contained in the second-order commonality for B and T and in the third-order commonality for B, P, and T. These results suggest that the unique portion for T and B, as well as their common portions with one another and with P, may play a role in influencing Percent of Graduates Going on to College.

The other four outcome measures in Table 10.1.1.6 tend to be less predictable than Percent Going to College for each of the individual sets of variables with the exception of F. For this latter set, the squared multiple correlations remain about the same for Percent Non-White Going to College and Percent Going to Post-Secondary Training. They drop somewhat for Percent Non-White Going to Post-Secondary Training, and increase for Percent of Boy Dropouts (a measure that has a .87 correlation with Percent of Girl Dropouts). The unique portions for B are smaller for these latter four measures than for Percent Going to College, while the unique portions for F, P and T are usually larger. F has a slight unique portion for Percent Non-White Going to College, and a

Table 10.1.1.6. - Squared Multiple Correlations* of B, F, P, and T With Percent Going On To College, Percent Going onto Post-Secondary Vocational Training, and Percent Dropouts, Expressed as a Function of Their Unique Association and Their Commonality Coefficients

Commonality Coefficients †		Sets of Regressor Variables											
		B	F	P	T	B	F	P	T	B	F	P	T
First Order	U(B)	05				01				01			
	U(F)						03				06		
	U(P)			03				04				05	
	U(T)				13				08				04
Second Order	C(BF)	01	01										
	C(BP)	01		01						01		01	
	C(BT)	17			17	03			03	01			01
	C(FP)						02	02			02	02	
	C(FT)		01		01		01		-01		-02		-02
	C(PT)							-01	-01				
Third Order	C(BFP)	01	01	01						-01	-01	-01	
	C(BFT)												
	C(BPT)	12		12	12	02		02	02				
	C(FPT)												
Fourth Order	C(BFPT)	01	01		01	-01	-01	-01	-01				
R^2 for a Single Set of Variables		38	04	17	44	05	05	06	13	02	05	07	03
Dependent Variable		Percent Going on to College				Percent Non-White Going on to College				Percent Going on to Post-Secondary Training			

† The squared multiple correlations obtained when all four sets are entered into the regression are: Percent Going to College, 55; Percent Non-White Going to College, 22; Percent Going to Post Secondary Vocational Training, 16; Percent Non-White Going to Post Secondary Vocational Training, 15; Percent of Tenth Grade Boys Who Dropout Before Completion of the Twelfth Grade; 35; There were 780 schools included in these analyses.

* Rounded to two places of decimals after computation, leading decimals & zeros omitted.

Table 10.1.1.6. - (continued)

Commonality Coefficients†		Sets of Regressor Variables							
		B	F	P	T	B	F	P	T
First Order	U(B)	01				02			
	U(F)		01				04		
	U(P)			05				11	
	U(T)				03				05
Second Order	C(BF)					-01	-01		
	C(BP)					-02		-02	
	C(BT)	02			02	08			08
	C(FP)						-01	-01	
	C(FT)		01		01		03		03
	C(PT)							01	01
Third Order	C(BFP)					01	01	01	
	C(BFT)	-01	01		-01	-02	-02		-02
	C(BPT)	03		03	03	04		04	04
	C(FPT)						02	02	02
Fourth Order	C(BFPT)								
R^2 for a Single Set of Variables		05	02	08	09	10	07	16	21
Dependent Variable		Percent Non-White Going on to Post-Secondary Trainin				Percent of Boy Dropouts			

† The squared multiple correlations obtained when all four sets are entered into the regression are: Percent Going to College, 55; Percent Non-White Going to College, 22; Percent Going to Post-Secondary Vocational Training, 16; Percent Non-White Going to Post-Secondary Vocational Training, 15; Percent of Tenth Grade Boys Who Dropout Before Completion of the Twelfth Grade, 35; There were 780 schools included in theses analyses.

* Rounded to two places of decimals after computation, leading decimals and zeros omitted.

slight second-order commonality with P and T. Most of the predictable variance is contained in the unique portions of P and T, especially in their third-order commonality with B, and in the second-order commonality of T and P. It seems that, even if F plays a small role in Percent Non-White Going to College, the greatest role is played by P and T.

A different situation is encountered for Percent Going on to Post-Secondary Training. For this outcome, F has the next-to-largest squared multiple correlation (the largest being for P) and the largest unique portions. For Percent Non-White Going on to Post-Secondary Training, F has the lowest squared multiple correlation, and the next-to-lowest unique portion (the lowest unique portion being for B).

Percent of Tenth Grade Boys Who Drop Out Before Completion of the Twelfth Grade is most predictable (see R^2 for a single set)from T and P. It is less predictable from B, and least predictable from F. The largest unique portion is for P. T and F have lower but similar unique values; B has the lowest value. There are slight to appreciable commonalities for F and T at the second order, and for F, P and T at the third-order. In short, there are appreciable independent contributions made by P, T, and F, as well as variance shared by these three sets with one another.

10.1.2. Possible Causal Inferences

We have seen that the two sets of variables most heavily involved in school outcomes are Other School Outcomes (Chapter 9) and School Personnel and Personnel Expenditures (Chapter 5). In order to make causal inferences from these associational data we will adopt the same kinds of assumptions as those made in Chapter 5. There it was assumed that there is some degree of proportionality between a dependent variable's independent role or contribution and its causal influences. "Independent role or contribution" was defined as the percent of its variance associated with a set of variables independently of other sets. The term "common role or contribution" was used to indicate that we could ascertain neither of two things: (1) the extent to which variance shared by two or more sets of variables should be apportioned to one or the other of the sets; (2) the extent to which the sets themselves may share some of the influence. The following inferences are organized around the outcome measures. The letters B, F, P, and T designate the same sets of variables as in the first part of this chapter.

Expectations for Excellence. The independent contributions of B to Expectations were found to increase progressively through the ninth grade. At the twelfth grade, however, they dropped sharply. Part of this may be due to the dramatic shift in Expectations of non-white schools at the twelfth grade (see Table 4.3.7 in Chapter 4): at the lower grades Expectations of white schools exceed those for non-white, but at the twelfth grade the opposite occurs. The independent contributions of F to Expectations are slightly larger at the ninth and twelfth grades. But even there, they are still small. The independent contributions of P and T are also larger at the ninth and twelfth grades, and may be largest at the twelfth grade. A slight common role of F with P and T seems to exist at the ninth and twelfth grades. But it is impossible to detect any important contribution made by F at the third and sixth grades, either individually or in combination. The most important influence on Expectations may be wielded through the common role of B, P, and T.

Attitude Toward Life. The independent influence of B on Attitude Toward Life gets progressively larger through the ninth grade but drops sharply at the twelfth grade. But F, P, and T exhibit no such progression; their independent influence becomes, at most, only slightly larger with the higher grades. In particular, F has virtually no influence, either individually or in combination, except a very small independent role at the twelfth grade. It may be that the greatest influence on Attitude Toward Life is the combination of B, P, and T. At any rate, the influence of these three sets combined is usually greater than that of any set by itself or in combination with only one of the other two sets.

Educational Plans and Desires. The same role is played by B in Educational Plans and Desires as in the previous two outcomes: its independent influence increases through the ninth grade and then drops sharply at the twelfth. The independent influence of P and T is larger at grade nine, and of P, T, and F at grade twelve. The independent contribution of F at the twelfth grade is very slight, but its common role with B increases progressively from grade six through twelve. A common role of F with B, P, and T is found at the sixth and ninth grades (see the third- and fourth-order commonalities). The independent influence of B is still greater, especially in its common role with P and T. At the twelfth grade, however, T also has an independent role.

Study Habits. The independent contribution of B is as before. Despite the drop in its influence at grade twelve, however, its magnitude relative to F, P, and T at this level remains quite large. The independent contributions of P and T increase slightly at the higher grade levels. The role of F is independent only at the twelfth grade, where it also has a slight common role with P, T, and B. At the other grade levels it has virtually no relationship with the other sets. In fact, most of the influence in the development of Study Habits can be attributed to the independent role of B, and most of what remains to the common role of P and T. Even this remaining influence, however, is rather small.

Achievement. The independent contribution of B to Achievement increases slightly from the lower grades onward until the ninth grade, when it begins to decrease. There is almost no independent contribution from F, and only small ones from P and T. What is apparent upon examination of the entire table (10.1.1.5) is that any possible influence of each of these four sets of variables on Achievement is bound up with the other three. The influence of F, however, is clearly less than that of the other sets; it does have a common role with them at the higher grade levels, but the really large contributions come from the common roles of the B, P, and T. Indeed, this commonness increases progressively with grade level, dramatically outweighing the role of F.

The twelfth-grade outcome measures. The largest independent roles in Percent Going to College is played by T and B, with a smaller contribution from P. No independent influence is exerted by F, but it has a slight common role with the other three sets of variables. The major influence, however, may come from the independent and common roles of T and B, and the common role for P.

Most of the independent contribution to Percent Non-White Going to College comes from T and P. A small independent contribution comes from F, and an even smaller one from B. Slight common roles are played by B, P, and T. The common role of F with P and T is the smallest of all. Clearly, most of the influence on Percent Non-White Going to College stems from the independent roles of F, P, and T. The same may be true for Percent Going on to Post-Secondary Training. The greatest role here is played by F, with P and T running just behind. Common roles for these sets are virtually non-existent except for a slight one involving F and P. The greatest influence on Percent Non-White Going to Post-Secondary Training is exerted by the independent and common contributions of P and T, and by their common contribution with B. The independent role of F here is very small, but it does have a common role with T.

Finally, independent contributions are made by F, P, and T to the Percent of Dropouts. The greatest of these is made by P, followed closely by T and F. The independent contribution of B is very small. Slight common roles are played by F in conjunction with P and T, and larger ones by B in conjunction with P and T. It is possible that the greatest influences on Percent of Dropouts may come from the independent contributions of F, P, and T.

SUMMARY

We have seen that for the school outcomes we have labeled Expectations for Excellence, Attitude Toward Life, Educational Plans and Desires, and Study Habits and Achievement, a set of variables related to the school's personnel expenditures (F) makes a very small and sometimes non-existent independent contribution. Furthermore, this set of variables exerts little or no influence through variance common with the other sets of variables with which we have been dealing in this analysis. On the other hand, the variables connected with the school personnel's background (P) and teaching situation (T) may be deeply involved with the student social background variables (B) in influencing the school outcomes.

We have also seen that, for a special set of twelfth-grade outcome measures, although both the relative and the independent contributions of these same personnel expenditure variables was somewhat increased, the same trends tended to prevail. In other words, most of the influences on these outcomes could be attributed to the independent and common roles of the sets of variables connected with the school personnel's background and the teaching situation. The variables connected with the social background of the students usually played a lesser role. However, a reduced role was often observed for the student background variables with most of the outcome measures at the twelfth grade (that is, with Expectations, Attitude Toward Life, etc.).

These results suggest that increases in personnel expenditures may result in only small improvements in school outcomes. A real answer to a question of this kind would require large scale educational experimentation. What kinds of changes, then, would improve school outcomes? The answer must lie in the other sets of school personnel variables. One possible strategy would be to examine the regression coefficients of the variables in these different sets, and to attach causal importance to them. This could be misleading, however. The magnitudes and signs of these regression coefficients are highly dependent upon the intercorrelations that exist among the variables being used. When the intercorrelations are high the coefficients can be particularly misleading. A second alternative that suggests itself is to look at the zero-order correlations to see which kinds of variables in each set are correlated with the outcomes. And these correlations have already been given in Chapter 4. Inspection of Tables 4.3.8 through 4.3.13 in Chapter 4 reveals that the variables consistently related to the school outcomes (besides Other Outcomes) include: (1) teacher's view of his teaching conditions (Teaching Conditions); (2) teacher's Racial-Ethnic Group Membership; (3) Teacher's Vocabulary Score; (4) Percent of White Students at the Teacher's Undergraduate Institution; (5) Percent White of the Teacher's Students; (6) Socio-Economic Status of the students; (7) student's Family Structure; (8) the Racial-Ethnic Composition of the students. Variables 1 through 5 were also shown to be related to school outcomes, after certain statistical controls had been applied (see Chapter 6). In this chapter, variables 2 through 4 were included in the School Personnel's Prior Background set, variables 1 and 5 in the Teaching Situation set, and variables 6 through 8 in the Student Body set. The important point to note is that these variables are correlated both with one another and with the School Outcomes. Moreover, it is these correlations that account in part for the common contributions of the different sets of variables. Perhaps, if the dependence of schools on the social background of students and school personnel were reduced through the achievement of a greater socioeconomic and racial balance, variables such as the teacher's training and the school's physical facilities might then play a greater role in influencing school outcomes. A more detailed discussion of these results, together with results from other chapters, is presented in Chapter 11. These results also indicate that useful insights about the influence of teachers on their students might be gleaned from analyses of the teacher's background and preparation, especially the racial composition of the college he attended. The following section of this chapter presents some of these analyses.

10.2. Analyses of Individual Teacher's Background

The previous section of this chapter, together with the analyses in Chapters 4 and 6, showed a substantial relationship between a school's outcomes and the aggregate or average social background of the teachers in it. Especially prominent in this relationship was the teachers' experience of racial imbalance, whether in their undergraduate institutions or on the school's teaching staff (for the latter, see Table 5.3.2.3 in Chapter 5). This section attempts to analyze various aspects of a teacher's background and training while omitting the aggregation by schools. In this way we hope to shed light on the development of variables that, in the aggregate, were shown to be related to school outcomes. For example, the aggregate Teacher's Vocabulary Score was shown to be related to Achievement (that is, to school achievement). In this section, however, we shall study different aspects of the background of individual teachers that are related to Teacher's Vocabulary Score.

10 2.1 Teachers and Their Schools

In moving the focus of our analysis from teachers aggregated by schools to the individual teacher, we are particularly interested in knowing how much of the total variance is associated with the schools in which each teacher is located. For example, if many schools have a preponderance of either older teachers or younger teachers then the variable of Teacher's Age will be associated with school differences. If, on the other hand, every school has about the same mix of younger and older teachers, then Teacher's Age will not be associated with school differences. A more formal way of expressing this kind of relationship might be:

Let DAT = Total Differences Among Teachers in Attribute X
Let DAS = Total Differences Among Schools in Attribute X
Let DWS = Total Differences Among Teachers Within Schools in Attribute X

then

DAT = DAS + DWS

By dividing this equation by DAT one can express DAS and DWS as percentages. Table 10.2.1 gives such percentages, for selected variables. It will be noted that this is equivalent to giving the ratio of the among-school variance to the total variance, corrected for the appropriate degrees of freedom.*

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* The correction for the appropriate degrees of freedom here is a modification of the shrinkage formula for a multiple correlation (see Thorndike 1949, p. 204). To use this formula each school is regarded as a dummy variable or pseudo variable where a student is assigned a one if he attends that school and zero otherwise. This results in one dummy variable for each school; the dependent variable is regressed against the dummy variables. The formula used is:

$\hat{P}^2 = 1 - \frac{(N-1)\ (1-R^2)}{N-p}$ where $\hat{P}^2$ = the corrected squared multiple correlation
N = the number of students
n = the number of schools
p = $n - 1$
R^2 = the ratio of the among-school variance (S^2_A) to the total variance (S^2T), so that $S^2_A/S^2T = R^2$

Table 10.2.1. - Percent of Total Variance for Different Teacher Variables That is Associated With the Schools In Which Teachers Are Located

Variable Title	Grade Levels* 9-12	 K-6
Age	12	26
Experience	14	27
Teaching Conditions	36	45
Localism of Background	26	29
Social Economic Background	15	22
Training	20	40
College Attended	23	27
Teaching Related Activities	17	21
Preference for Student Ability Level	13	18
Sex	10	15
Racial-Ethnic Group Membership	90	81
Percent White of Students at Teacher's Undergraduate Institution	84	82
Annual Teaching Salary	30	53
Percent White of Teacher's Students	69	76
Vocabulary Score	26	42
Number of Schools	780	2,372
Number of Teachers	24,008	30,345

*The percents of Total variance are for teachers classified as to whether they teach grades kindergarten through sixth or grades nine through twelve. Percentages for teachers classifiable at other grade levels were not available. The percentages have been rounded to two places of decimals and the leading decimals omitted.

The percentages in Table 10.2.1 represent upper limits for the amount of variance that can be accounted for by studying the correlates of school differences. If we were to obtain a multiple correlation of 1.00 between aggregate teacher characteristics and aggregate Teacher's Vocabulary Score, we would have accounted for approximately 42% of the total variance in this variable (see Vocabulary Score for K-6 teachers in Table 10.2.1.1). The remaining 58% would have to be accounted for by differences among teachers within schools, and by error.

These percentages are best interpreted as showing the extent to which teachers similar with respect to the variable under consideration tend to be located in the same schools. We say this because if there were no association of teachers' attributes with the schools in which they are located, then the percentage of total variance associated with the schools would be near zero for that variable.

Inspection of Table 10.2.1.1 shows that there are not many schools that have a greater proportion of female teachers than do other schools. The remaining percentages range from moderate to large. They are almost always larger for K-6 schools than for 9-12 schools. The chief exception is in the case of Teacher's Racial-Ethnic Group Membership and Percent of White Students at the Teacher's Undergraduate Institution. Moderate values are observed for such variables as Teacher's Age, Experience, Localism of Background, Socio-Economic Background, College Attended, Teaching Related Activities and Preference for Student Ability Level. Somewhat larger are those values for Teaching Conditions, Training, Salary and Vocabulary. The largest values are for Teacher's Racial-Ethnic Group Membership, Percent White of Students at Teacher's Undergraduate Institution and Percent White of Students in Teacher's Class. These large values show the tremendous racial imbalance that exists in our public schools.

10.2.2. Zero-order Correlations for Selected Teacher Variables

The tables that follow give correlations for selected aggregate teacher variables. These variables were

Table 10.2.2. - Zero Order Correlations of Selected Teacher Variables for Secondary (S) and Elementary (E) Teachers

	Vocabulary Score		Racial-Ethnic Group Membership		College Attended		Percent White Undergraduate		Annual Teaching Salary		Teaching Conditions		Preference For Student Ability Level		Percent White of Teachers Students	
Variable Title*	S	E	S	E	S	E	S	E	S	E	S	E	S	E	S	E
Experience	00	-07	-03	-02	-03	-16	01	02	48	31	02	06	-08	-08	-05	-01
Teaching Conditions	07	09	17	22	06	03	16	19	00	02			09	10	27	38
Localism	04	06	02	05	05	09	03	05	00	08	-01	00	01	01	04	04
Socio-Economic Background	18	20	12	16	14	19	11	13	-03	02	07	06	16	15	07	09
Training	10	12	07	01	08	07	08	01	81	79	00	03	02	04	-01	-04
College Attended	15	19	19	19			15	16	11	08	06	03	09	12	10	10
Teaching Related Activities	-05	-13	-15	-18	01	-02	-17	-18	03	02	01	-01	-05	-10	-11	-13
Preference for Student Ability Level	22	16	12	16	09	12	11	15	00	03	09	10			10	16
Sex	12	03	-06	00	01	-03	-05	-01	-17	-09	05	07	01	-02	-05	00
Age	04	-01	00	04	-02	-12	05	08	41	27	-01	06	-08	-08	-03	04
Racial-Ethnic Group Membership	31	40			19	19	77	81	13	08	17	22	12	16	60	64
Percent White at Undergraduate Institution	29	36	77	81	15	16			13	08	16	19	11	15	59	60
Credits Beyond Highest Degree	13	05	02	-02	08	07	03	-01	39	34	-05	-05	04	-01	-06	07
Assignment to Present School	-01	02	13	12	02	01	11	11	-03	-04	06	05	-02	01	14	09
Salary	12	16	13	08	11	08	13	08			00	02	00	03	00	-02
Percent White of Teachers Students	20	28	60	64	11	10	59	60	00	-02	27	38	11	16		
Hours/Day Spent in Classroom Teaching	07	10	04	08	03	04	01	06	-02	14	03	-01	06	02	01	01
Vocabulary Score			31	40	15	19	29	36	12	16	07	09	22	16	20	28

*The correlations for Secondary Teachers (S) are based upon 24,008 teachers who could be classified as teaching grades 9-12. For Elementary Teachers (E) the correlations are based upon 36,241 teachers who could be classified as teaching grades kindergarten through 8.

All figures have been rounded to two places of decimals and the leading decimals have been omitted.

shown to be related to school outcomes both before and after schools had been equated for differences in size and in the social background of their students. Many of these same variables were also shown to be related to school outcomes in combination with other sets of variables (see Chapters 5, 7 and 8). Table 10.2.2 summarizes a number of important basic relationships, and provides some insights into the results of the commonality and regression analyses given in the next section (these correlations are also given in Appendix VIII). In order to reduce the amount of discussion, correlations of less than .10 will not be discussed.*

When teachers who have high scores on the vocabulary test are compared with low-scoring teachers we note that they:
(i) come from the higher socio-economic strata (Socio-Economic Background);
(ii) are more likely to have not only an advanced degree, but accreditation (Training) and a higher salary level (Training and Salary);
(iii) are more likely to have attended a college that offered an advanced degree and that they thought had a high academic standing (College Attended);
(iv) prefer to work with high ability students (Preference for Student Ability Level);
(v) are more likely to be white, to have attended a predominantly white undergraduate institution, and to have predominantly white students in their class.

White teachers, when compared with non-white teachers:
(i) enjoy more favorable Teaching Conditions, viz. they feel that the students try hard to achieve and that there is a relative absence of school problems;
(ii) attended a higher ranking college (College Attended);
(iii) are less involved in teaching-related activities;
(iv) prefer to work with high ability students;
(v) are much more likely to have gone to a predominantly

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* A detailed discussion of these variables was given in Chapter 3.

white undergraduate institution;
(vi) are more likely to have chosen their present school than to have been assigned to it;
(vii) have a greater proportion of white students;
(viii) attained higher scores on the Vocabulary test.

Teachers who attended an undergraduate institution that offered an advanced degree, and that they felt had a high academic standing, were compared with teachers who attended institutions that ranked lower on these items. It was found that the teachers who attended the higher-ranking institutions:
(i) come from the higher socio-economic strata;
(ii) are more likely to be white and to have attended an undergraduate institution with a high proportion of white students;
(iii) have a higher proportion of white students;
(iv) attained higher scores on the vocabulary test.

Both Percent of White students at Teacher's Undergraduate Institution and Percent White of Teacher's Students are highly correlated with Teacher's Racial-Ethnic Group Membership. The correlations for the secondary and elementary levels are, respectively, .77 and .81 for Percent of White Students at Teacher's Undergraduate Institution, and .59 and .60 for Percent White of Teacher's Students. The comments that were made for Teacher's Racial-Ethnic Group Membership also apply to these other two variables. Consequently, they will not be discussed further.

Teachers with high salaries tend to:
(i) have more Experience;
(ii) have more Training (an index to which Salary is a major contributor);
(iii) be older;
(iv) have more credits beyond their highest degree;
(v) have higher vocabulary test scores than their lower salaried counterparts.

Teachers who enjoy favorable Teaching Conditions (viz. they say that the students try hard to achieve, that there is a relative absence of school problems, etc.), when compared with teachers who say they have less favorable Teaching Conditions, are more likely:

(i) to be white;
(ii) to have attended a predominantly white undergraduate institution;
(iii) to have predominantly white students.

Teachers who express Preference For Working With High Ability Students are more likely:
(i) to come from the higher socio-economic strata (Socio-Economic Background);
(ii) to be white and to have attended predominantly white undergraduate institutions;
(iii) to have a higher percent of white students;
(iv) to have attained higher vocabulary test scores.

These correlations show that Teacher's Vocabulary, Racial-Ethnic Group Membership, and experience in racially imbalanced situations relate to most of the other teacher variables. The next section presents the results of regression and commonality analyses that were conducted to illuminate the independent and common roles played by some of these variables in the preparation of teachers.

10.2.3. Commonality Analyses of Teacher Background Variables

The teacher's score on the vocabulary test, when treated as an aggregate school variable, was shown to be related to school outcomes. It was also shown to be moderately correlated with a large number of other teacher variables when the individual teacher was used as the unit of analysis. If we can regard this score as a true indicator of the teacher's verbal facility, then it is of interest to see how other variables reflecting different stages of the teacher's career are related to it. In order to conduct such an analysis, three different career stages were distinguished: Teacher's Background (B), Characteristics of Schools Attended (C), and (later or current) Teaching Situation (S). The variables comprising each set are as follows:

B: TEACHER'S BACKGROUND

(1) Socio-Economic Background
(2) Age
(3) Sex
(4) Racial-Ethnic Group Membership

C: CHARACTERISTICS OF SCHOOLS ATTENDED

(1) Localism (i.e., attended local schools versus schools in another county or state)
(2) College Attended
(3) Percent of White Students at Teacher's Undergraduate Institution

S: TEACHING SITUATION

(1) Teaching Conditions
(2) Training (i.e., accreditation, salary, and highest degree held)
(3) Teaching-Related Activities
(4) Preference for Student Ability Level
(5) Credits Beyond Highest Degree
(6) Assignment to Present School
(7) Hours Per Day Spent in Teaching
(8) Percent White of Teacher's Students

Three different kinds of analyses, presented in Table 10.2.3.1., were conducted with these sets of variables*:

(1) All the variables in B, C, and S were used.

(2) All the variables were used with the exception of Racial-Ethnic Group Membership in B, Percent of White Students at Teacher's Undergraduate Institution in C, and Percent White of Teacher's Students in S.

(3) The _only_ variables used were the racial-ethnic related ones, _viz_., the ones excluded from (2).

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* The subscripts 1, 2, and 3 on the sets of regressor variables in Table 10.2.3.1 correspond to the first, second, and third analyses described in the text.

Inspection of Table 10.2.3.1 shows that according to the first analysis the largest unique portions, for both elementary and secondary teachers, are for B and S. The unique values for C range from negligible, for secondary teachers, to small, for elementary teachers. The second-order commonality is appreciable -- appreciable, that is, relative to the magnitude of the other variables -- for B and C, and so is the third-order commonality. This indicates a common role* for all three sets.

In the second analysis, with the racial-ethnic related variables excluded, the higher-order commonalities vanish. The only values that remain are the unique associations for each set, and these, as in the first analysis, are largest for B and S, and lowest for C.

Clearly, the racial-ethnic related variables are the ones contributing most to the predictability of these sets of variables. The third analysis was conducted to demonstrate this predictability. Here, the unique portions for C and S vanish, while the unique portion for B retains a slight value. Most of the predictable variance is contained in the second-order commonality of B and C, and in the third-order commonality for B, C, and S.

Analyses (1), (2), and (3) have shown that, insofar as Teacher's Vocabulary Score can be regarded as a stable attribute of the teacher, the sets of variables that play the largest roles in the prediction of this attribute are B and C. It is clear, however, that C has a large common role in prediction but a very small independent one. The aspects of B and C that play the largest roles are Teacher's Racial-Ethnic Group Membership and Percent of White Students at the Teacher's Undergraduate Institution. This latter variable has a large common role not only with Teacher's Racial-Ethnic Group Membership but with Percent White of Teacher's Students, which is part of S.

When we compare these results with the correlations

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* The terms independent and common role are used as they were defined in the previous section.

Table 10.2.3.1. - Squared Multiple Correlations* for B,C, and S With Vocabulary Score Expressed, as a Function of Their Unique Association and Their Commonality Coefficients, When Racial-Ethnic Background and Racial Balance Measures are Included and Excluded

		Sets of Regressor Variables								
Commonality Coefficients†		B_1	C_1	S_1	B_2	C_2	S_2	B_3	C_3	S_3
	U(B)	03			02			03		
First	U(C)		01			02				
Order	U(S)			02			05			
	C(BC)	05	05		01	01		06	06	
Second	C(BS)	01		01	01		01	01		
Order	C(CS)					01	01			
Third Order	C(BSC)	08	08	08				07	07	07
R^2 for a Single Set of Variables		18	15	12	04	04	07	16	13	08
Dependent Variable		Elementary Vocabulary			Elementary Vocabulary			Elementary Vocabulary		

		Sets of Regressor Variables								
Commonality Coefficients		B_1	C_1	S_1	B_2	C_2	S_2	B_3	C_3	S_3
	U(B)	04			03			02		
First	U(C)		01			01			01	
Order	U(S)			05			06			
	C(BC)	04	04					04	04	
Second	C(BS)	01		01	01		01			
Order	C(CS)					01	01			
Third Order	C(BSC)	05	05	05				04	04	04
R^2 for a Single Set of Variables		13	10	11	04	02	08	10	08	04
Dependent Variable		Secondary Vocabulary			Secondary Vocabulary			Secondary Vocabulary		

† B designates Teacher Background; C, Area of Schooling and College Attended; S, Teaching Situation. The subscripts refer to the composition of the different sets of variables. Thus one designates the full set; two designates the sets with Teacher's Racial-Ethnic Group Membership excluded from B, Percent White at Undergraduate excluded from C and Percent White of Teacher's Students excluded from S; three designates that these latter three variables only were used. There were 24,008 Secondary and 36,241 Elementary teachers included in those analyses. The squared multiple correlation when all three sets are entered into the regression are for Elementary and Secondary respectively: First Analysis (1), 22, 19; Second Analysis (2), 12, 12; Third Analysis (3), 16, 10.

*Rounded to two places of decimals after computation, leading decimals and zeroes omitted.

in Table 10.2.2, we see that the teaching profession has a caste-like structure based on color. We can also infer how that caste perpetuates itself. The process, it may be suggested, is somewhat as follows. Non-whites are more likely to be born into strata of society that afford comparatively few opportunities, through family or school, for the development of a "good" English vocabulary. The same applies to various ethnic groups. Thus for Negroes, Mexican-Americans, Indian-Americans, Puerto Ricans, Oriental-Americans and native Alaskans, either English may be a second language or the English used in the home may be incorrect by school standards. In addition, members of these groups are more likely to attend schools where they are in a majority. Such schools, as we have seen in previous chapters, offer education of a significantly lower quality, and are less oriented toward achievement or the motivation of achievement. Teachers from this kind of background are then placed in charge of students who share it with them. Naturally, the effects of the background, including poor command of English, are then reinforced.

The remaining analyses in this chapter attempt to uncover the role played by College Attended and Percent White of Teacher's Undergraduate Institution in predicting Vocabulary Score, Teacher's Preference for High Ability Students, and Teacher's Salary. Teacher's Racial-Ethnic Group Membership was also included in the analyses, in order to give an indication of the role played by the teacher's background. Finally, since it was expected that the older, more experienced teachers would have higher salaries, we decided to include Teacher's Age. These analyses are given in Table 10.2.3.2. A high score on each variable indicates an older, white teacher who attended a predominantly white college that offered an advanced degree and had a high academic standing.

Inspection of Table 10.2.3.2 shows that, in predicting Vocabulary Score, there are slight unique portions for Teacher's Racial-Ethnic Group Membership and College Attended, and near-zero values for Age and for Percent of White Students at Teacher's Undergraduate Institution. Most of the predictable variance is contained in the second-order commonality of Teacher's Racial-

Table 10.2.3.2. - The Squared Multiple Correlations* for R, C, W, and A, Expressed as a Function of Their Unique Associations and Commonality Coefficients for Teacher's Vocabulary, Salary and Preference for High Ability Students

Sets of Regressor Variables

Commonality Coefficients†		R	C	W	A	R	C	W	A	R	C	W	A
First Order	U(R)	03				02							
	U(C)						01						
	U(W)			01				01					
	U(A)												07
Second Order	C(RC)												
	C(RW)	11		11		07		07					
	C(RA)												
	C(CW)												
	C(CA)												
	C(WA)												
Third Order	C(RCW)	02	02	02		01	01	01					
	C(RCA)												
	C(RWA)												
	C(CWA)												
Fourth Order	C(RCWA)												
R^2 for a Single Set		16	03	13		10	02	08		01	01	01	07
Dependent Variable		Elementary Vocabulary Score				Secondary Vocabulary Score				Elementary Salary			

Sets of Regressor Variables

Commonality Coefficients		R	C	W	A	R	C	W	A	R	C	W	A
First Order	U(R)												
	U(C)		01				01						
	U(W)												
	U(A)				17				01				01
Second Order	C(RC)												
	C(RW)	01		01		02		02		01		01	
	C(RA)												
	C(CW)												
	C(CA)												
	C(WA)												
Third Order	C(RCW)					01	01	01					
	C(RCA)												
	C(RWA)												
	C(CWA												
Fourth Order	C(RCWA)												
R^2 for a Single Set		02	01	02	17	03	01	02	01	02	01	01	01
Dependent		Secondary Salary				Elementary Preference for Student Ability				Secondary Preference for Student Ability			

†R designates the Teacher's Racial-Ethnic Group Membership; C, College Attended; W, Percent of White Students at the Teacher's Undergraduate Institution; A, Teacher's Age. The squared multiple correlations obtained when all four variables are entered into the regression for Elementary and Secondary respectively are: Vocabulary, 18, 11; Salary, 08, 20; Preference for Student Ability Level, 05, 03. There were 36,241 Elementary and 24,008 Secondary teachers included in these analyses.

*Rounded to two places of decimals after computation, leading decimals and zeroes omitted.

Ethnic Group Membership and Percent of White Students at Teacher's Undergraduate Institution, and in the third-order commonality of these two variables with College Attended.

What do these results mean? At the very least, they suggest that College Attended, with all that this implies (see p. 66 above), has a very slight independent role in the development of Vocabulary Score. It has a slightly greater common role with Teacher's Racial-Ethnic Group Membership and with Percent of White Students at Teacher's Undergraduate Institution. The largest role, however, is played by Teacher's Racial-Ethnic Group Membership, both independently and in common with the Percent of White Students at Teacher's Undergraduate Institution.

The analysis also shows that almost all of the differentials in salary levels among teachers can be accounted for by differences in age and experience. At the secondary level only a slight independent role is played by College Attended. All the higher-order commonalities are so small they approach vanishing point. It is true, however, that College Attended has a slight independent role at the elementary level, where it helps to predict Preference for High Ability Students. At the same level, a small common role is played by Teacher's Racial-Ethnic Group Membership and by Percent White at Undergraduate Institution. But for secondary teachers these trends do not hold up.

The remaining commonalities are negligible. Neither the racial composition of the college attended nor the teacher's racial-ethnic background appear to play much of a direct role in the development of a preference for working with students of a particular ability level. Rather, it is the teachers who score high on the vocabulary test who prefer to work with high ability students (see the correlations in Table 10.2.2). Since, as we have seen, the racial composition of the school and the racial-ethnic background of the teacher may help to determine Teacher's Vocabulary Score, these same variables may also play indirect or cooperative roles with Vocabulary Score in predicting Preference for High Ability Students. This assumes, of course, that Vocabulary Score is entered explicitly into the analysis.

10.2.4 Possible Causal Inferences

In this section variables that had been shown to be related to school outcomes as aggregate variables have been studied for individual teachers. We have given the percent of variance in different teacher variables that is associated with the schools in which they are located. We found that the variables most highly associated with school differences were those that pertained to conditions of racial and ethnic imbalance (see p 273). Still other variables that had moderate to high associations with school differences were Teacher's Annual Teaching Salary, Teacher's Vocabulary Score, and the teacher's view of his teaching situation (see p. 273).

With the individual teacher as the unit of analysis, correlations among the teacher variables were computed and compared. The variables most frequently correlated with other teacher variables were Teacher's Racial-Ethnic Group Membership, Percent of White Students at the Teacher's Undergraduate Institution (with other experience in racially imbalanced situations), and Teacher's Score on Vocabulary Test.

Commonality and regression analyses were conducted to illuminate the independent and common roles played by some of these variables in the preparation of teachers. Since the Vocabulary score was shown to be related to a number of school outcomes as an aggregate variable, an analysis was made of the relative roles of variables that could be classified into one of three stages in the career development of a teacher. The three stages were Teacher's Background(B), Characteristics of Schools Attended (C), and Teaching Situation (S). Variables related to Racial-Ethnic Group Membership of teachers, Percent of White Students at Teacher's Undergraduate Institution, and Percent White of Teacher's Students were both included in and excluded from the analyses in order to show what influence they had in the prediction of Vocabulary Score. The analysis showed that the racial-ethnic variables not only had the greatest influence but were giving rise to the common roles of B, C, and S. When these three sets of variables were analyzed separately it was found that Teacher's Racial-Ethnic Group Membership has the largest independent role, as well as a large cooperative role with Percent White of Undergraduate Institution and Percent White of Teacher's Students. These results were interpreted as indicating that, as the educational experiences of white and non-white or ethnic teachers are presently constituted, the racial composition of the undergraduate institution does not have an independent influence on Vocabulary Score. It may, however, exert a cooperative influence in conjunction with other racial-ethnic related variables.

One possible reason why the racial composition of the undergraduate institution does not wield more of an independent influence is that the vast majority of non-white or ethnic teachers have in the past attended segregated educational institutions. In other words, so little integration has occurred that its independent influence has not become evident. Indeed, the large correlations that exist between Teacher's Racial-Ethnic Group Membership, Percent of White Students at Teacher's Undergraduate Institution, and Percent White of Students in Teacher's Class indicate the existence of a strong color-caste system in the teaching profession. What this system amounts to is that non-white students attend predominantly non-white educational institutions from which some emerge as teachers who then teach predominantly non-white students. Thus the system is not only self-perpetuating but self-reinforcing. Its principal mechanism of self-reinforcement is the perpetuation of differential verbal skills. Non-whites and members of ethnic groups tend to be born into the lower strata of society, where there are fewer opportunities to develop English-language skills. They also tend to be enrolled in segregated educational institutions, with all that this implies for lower achievement motivation and poorer educational quality. An additional result of segregation is that teachers from a non-white or ethnic background tend to pass on the disadvantages of that background to their students.

The other analyses were designed to show the roles of Teacher's Racial-Ethnic Group Membership, College Attended, Percent White at Undergraduate Institution, and Age in the development of Vocabulary Score, Salary Level, and Preference for Working With High

Ability Students. It was found that although the nature of the college attended has a slight independent role, as well as a common role with the teacher's racial-ethnic background and with the racial composition of the teacher's undergraduate institution, the largest contributions were made by the common roles of the teacher's racial-ethnic background and the school's racial composition. Most of the salary differentials could be accounted for by age and experience differences among teachers. None of these four variables played much of an independent or common role in Preference For Student Ability Level, whether the preference was for students of low or high ability.

It was further observed that teachers who scored high on the vocabulary test expressed a preference for working with high ability students. It had already been shown that the teacher's racial-ethnic background and college attended (including its racial composition) did play roles in the development of Vocabulary Score. It was therefore suggested that these variables might have an indirect influence on the development of Preference for Student Ability Level.

SUMMARY

Previous chapters suggested that a large role in influencing school outcomes is played by School Personnel and Personnel Expenditures, particularly in conjunction with the student body background variables of Socio-Economic Status, Family Structure and Racial-Ethnic Composition (see especially Chapters 5 and 8). This chapter attempted to pinpoint the kinds of school personnel variables that play a role in school outcomes. In order to do this, the set of school personnel variables was broadened to include more of the related variables. It was then broken down into three subsets (see p. 250). The set of student body background variables was also included in the analysis to show its common role with these other sets of variables.

The outcome variables were: Students' Expectations for Excellence, Attitude Toward Life, Educational Plans and Desires, and Study Habits and Achievement. At the twelfth grade there were also various special measures, such as Percent of Graduates Going to College. The results suggested that increases in personnel expenditure might result in improvements in school outcomes, but that they would be small ones (p. 269-70). In the absence of properly designed educational experiments, we can only guess at the possible effects of really large increases in such expenditure.

The other three sets of variables (pp. 269-70), with Student Body Social Background, were found to have large independent and common roles in school outcomes. In particular, the following variables, in conjunction with Student Body Social Background, appeared to be influential: Teaching Conditions (based on the teacher's view, it should be remembered); Teacher's Racial-Ethnic Group Membership; Teacher's Vocabulary Score; Percent of White Students at Teacher's Undergraduate Institution; Percent White of Students in Teacher's Class.

It was suggested that by reducing the dependence of schools on the social background of the students and school personnel (that is, by achieving a greater socio-economic and racial balance among both students and staff) that educational factors such as the teacher's training and the school's physical facilities might then have a greater chance to influence school outcomes.

Finally, we investigated various aspects of the individual teacher's background and training. We discovered that teacher preparation and performance are dominated by a color-caste system that, in all likelihood, is self-perpetuating. One effect of this system, it was suggested, is to reinforce differential verbal skills along racial and ethnic lines. The resultant distribution of verbal skills then plays a role in other variables, especially the teacher's preference for working with students of different ability levels.

11. TECHNICAL SUMMARY AND RECOMMENDATIONS FOR FUTURE RESEARCH

11.1. Objectives and Methodology

The general objective of this study was to find which characteristics of schools were related to school outcomes, and to suggest which ones might be most important in influencing these outcomes. The study used data from the Educational Opportunities Survey. This survey covered about 650,000 students in some 4,000 public schools throughout the country, together with their teachers, principals and superintendents. The grades selected for study were 1, 3, 6, 9, and 12, and the survey sample consisted of a 5 percent sample of schools.

The data base is comprehensive in the sense that detailed factual and attitudinal information was collected on the student's home background, attitude towards school, race relations and the world. A battery of ability and achievement tests was administered at each grade level. Information was collected from the teachers and principals concerning their training and experience, their view of the school, etc. The final part of the teacher questionnaire consisted of a 30 item contextual vocabulary test (p. 13). Principals also answered questions on the school's facilities, staff, programs, curricula, etc.

The same data base had already been used in the preparation of Equality of Educational Opportunity, a report presented to the Congress (Coleman et al., 1966). More detailed information on the data base can be obtained both from this earlier report and from Chapter 2 of the present report.

11.2 Item Analysis, Data Reduction and Index Development

One of the main problems in this study was to reduce its more than 400 variables to a much smaller number of indices and sets of indices. The purpose of this was twofold: to simplify data processing, and to group items on the basis of similar content and degree of correlation. In this way it was hoped that results of later analyses would be more sharply defined. For example, by grouping data on instructional facilities (number of school's language and reading labs, number of books in the school library, etc.) into a single index we expected to obtain a clearer picture of how far instructional facilities as such contribute to school outcomes.

Before the variables could be reduced to meaningful groupings, two major decisions had to be made. The first concerned the estimation of data missing because of non-responses. The procedure adopted was as follows. The responses to each question were analyzed against one or more dependent variables. In this way not only the percent responding to each item but also their mean score on the dependent variable could be used as a guide in coding the variables and in assigning a value to the non-respondents. Items from the Student questionnaire were analyzed against an Achievement composite that was developed from the five Achievement measures of Verbal Ability; Non-Verbal Ability, General Information, Math Achievement, and Reading Comprehension. Items from the Teacher's questionnaire were analyzed against the number of items correct on the Contextual Vocabulary test. The Principal's questionnaire items were analyzed against the school's size (the number of students enrolled), Rural-Urban Location, Parent's Socio-Economic Status, and Principal's Salary.

As a result of these analyses, it was possible to code the items from each questionnaire and then correlate them with one another. The intercorrelations were then subjected to a series of factor analyses. The particular factor analytic techniques used were Principal Component Analyses and Varimax rotations of these components (viz. the components with a latent root of one or greater were rotated). The guiding philosophy in this phase was to obtain meaningful groupings of variables -- i.e., groupings that had some empirical basis inasmuch as they were correlated with one another. The details of the procedural steps employed as well as the variables comprising each of the indices developed are given in Chapter 3. The descriptive labels for each index are:

STUDENTS

Expectations for Excellence*
Socio-Economic Status
Attitude Towards Life*
Family Structure and Stability
Educational Desires and Plans*
Study Habits*
Classroom Behavior†
Achievement

TEACHERS

Experience
Teaching Conditions
Localism of Background
Socio-Economic Background
Training
College Attended
Teaching Related Activities
Preference for Student Ability Level

PRINCIPALS AND SCHOOLS

Physical Plant and Facilities
Principal's Experience
Principal's Training
Principal's College Attended
Frequency of Testing
Pupil Transfers
Remedial Programs
Free Milk and Lunch Programs
Instructional Facilities
Specialized Staff and Services
Tracking and Ability Grouping
Accreditation
Age of Texts
Availability of Texts

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* Grades three, six, nine and twelve only.
† Grade one only.

Of the variables excluded from these indices, some were retained for separate analysis. Among these were Racial-Ethnic Group Membership (both student's and teacher's), Number of Pupils Per Teacher, and Number of Pupils Per Room. Others, such as teacher's membership in Phi Beta Kappa or similar association did not enter meaningfully into any of these indices, but were analyzed at a later stage.

11.3. Percent of Total Variance Associated With Schools Attended

Index scores were computed for the students at each grade level and then averaged by school. The averages were used in later analyses. For some variables, such as Achievement and Socio-Economic Status, we were interested in finding out to what extent students who were similar with regard to a given attribute were aggregated into the same schools. We expected this to tell us how far differences with regard to the attribute could be explained by studying differences among or between schools. For example, if it is known that 50 percent of the variance in a certain attribute is associated with the schools students attend, then the maximum amount of variance that can be explained by studying school correlates of the attribute is 50 percent. In other words, if we were to obtain a multiple correlation of 1.00 between a set of school aggregate variables and this attribute, we would still have explained only 50 percent of the total variance.

In our analysis of selected attributes, the total variance found to be associated with the schools students attend ranged within the following percentage limits:

Attribute of Interest	Percent of Total Variance Associated with Schools (Ran
Socio-Economic Status	28 - 39
Family Structure and Stability	12 - 24
Racial-Ethnic Group Membership	56 - 69
Expectations for Excellence	6 - 15
Attitude Toward Life	9 - 22
Educational Plans and Desires	9 - 12
Study Habits	11 - 19
Achievement	34 - 37

The much larger values for Racial-Ethnic Group Membership reflect the amount of racial segregation in the public schools. A detailed analysis of these values and their school correlates is given in Chapter 4.

11.4 Conditions Supporting the Notion of School Influences

Before attempting to ascertain the influence of school variables on school outcomes, allowance must be made for the kinds of students the schools get initially. Clearly, if school A gets children mainly from families where intellectual activities are not valued or pursued, and school B gets children from families with the opposite attitude, then one would expect the students in school B to have higher achievement levels than the students in school A. But the differences between the schools in this respect would have to be attributed to the influence of the different families rather than to that of the schools.

For this reason, we equated schools for differences in the home background and racial-ethnic composition of their students before trying to assess the influence of school variables. Home background was represented by the student indices of Socio-Economic Status and Family Structure and Stability. Student's Racial-Ethnic Group Membership was used to calculate the racial and ethnic composition of the student body. These three variables are called Student Body Social Background variables or, in shorter form, the Student Body variables.

To represent the school a comprehensive set of thirty-one school variables was used. This set comprised the following three subsets:

> Facilities: a subset of four variables referring to the size of the school's plant and physical facilities, its instructional facilities, age of school building and number of pupils per room
>
> Pupil Programs and Policies: a subset of ten variables referring to such practices as tracking, frequency of testing, remedial programs, free milk

and lunch programs, pupil-teacher ratio, etc.

School Personnel and Personnel Expenditures: a subset of seventeen variables referring to the principal's and teacher's experience, training, and college attended, the specialized staff and services that the school offers, the teacher's racial and ethnic group membership, vocabulary score, view of teaching situation, etc.

To represent school outcomes we used the student variables of Expectations for Excellence, Attitude Toward Life, Educational Plans and Desires, Study Habits and Achievement. At the twelfth grade we used five additional outcome measures: percent of graduates going on to college and percent going on to post-secondary vocational training, for both white and non-white, and percent of tenth-grade students who drop out before completing the twelfth grade.

If schools are having some influence on school outcomes, what kinds of relationships would we expect to find between these sets of variables? For one thing, the achievement and attitudes of the students should become more predictable from the School variables the longer the students stay in school. For another, the Student Body variables should exhibit a progressive increase, from the lower to the higher grades, in their correlation with both the School variables and the School Outcomes. In addition, if the intercorrelations of the Outcomes increase with the higher grade levels, it would appear that the Outcomes are reinforcing each other. All these trends, if detected, would support our hypothesis that school influences are at work. But this evidence alone would not be conclusive. First, we would have to make allowance for trends that can be attributed to other variables. Only if the trends persisted after we had done this could we be certain that school influences were at work. We shall return to this point below.

One way of representing the degree of intercorrelation that exists among all of the variables in a set is to divide the root associated with the first principal component of these intercorrelations by the number of variables in the set. The value thus obtained indicates the extent to which the variables in the set are correlated with one another. If all the variables are perfectly correlated, this value will be 100, meaning that the common variance is 100 percent. As the correlations among the variables in the set approach zero, the percent of common variance will also approach zero.* Table 11.4.1 gives the percent of common variance for the Student Body (B), School (S), School subsets of Facilities (F), School Personnel (T), and Pupil Programs (P), as well as those for the five school outcomes that were common to grades three through twelve.

We would not expect the intercorrelations of the Student Body variables (p.130-2) to change much for the different grade levels. Ideally, their degree of correlation should remain relatively constant. The fluctuations observed for these variables in Table 11.4.1 result partly from differences in data sources. At grades one and three the teacher provided much of the information on the students. At the higher grade levels, on the other hand, the student provided the information himself. Thus the response errors and the failure-to-respond errors originate from different sources. Also, after the sixth grade students tend to be aggregated into junior and senior high schools that tend to be both larger and more heterogeneous from a social point of view. After the ninth grade, students start dropping out of school. Those who drop out are likely to be from the lower socio-economic strata, to have a less well-knit family structure, and to be non-white. All of these factors can operate to perturb intercorrelations that would otherwise be more stable from one grade level to the next. Still, the fluctuations do not appear large enough to invalidate conclusions about school influences.

Similarly, one would not expect intercorrelations among School variables to change markedly over the grade levels. Table 11.4.1 shows that there is indeed a high degree of similarity in the percent of common variance for the full set of School variables, as well

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* See Chapter 3 for a fuller account of this technique.

Table 11.4.1 - Percent of Common Variance for the Student Body, School, and School Outcome Sets of Variables

Set of Variables	Percent of Common Variance at Grade Level				
	1	3	6	9	12
Student Body	70	72	76	79	71
School	14	14	14	15	15
School Facilities	37	37	37	35	36
School Pupil Programs	16	16	16	18	21
School Personnel	22	22	22	22	19
School Outcomes		54	76	71	47

Table 11.4.2. - Squared Multiple Correlations of the School Variables With the School Outcomes

School Outcome	Squared Multiple Correlation of the School Variables at Grade Level				
	1*	3	6	9	12
Expectations for Excellence		08	23	18	38
Attitude Toward Life		09	30	35	42
Educational Plans and Desires		14	33	32	42
Study Habits		36	28	20	16
Achievement	47	49	73	76	79

*Outcome measures other than Achievement were not available at the first grade.

as for the subsets of Facilities, Pupil Programs, and Personnel. The changes that do occur are, as might be expected, at the higher grade levels.

The percent of common variance for the Outcome measures shows a marked jump from the third to the sixth grade, followed by a slight decline at the ninth grade and a marked drop at the twelfth grade (Outcome measures other than Achievement were not available at the first grade). Part -- perhaps even all -- of the jump between third and sixth grade can be explained by the fact that the Outcome measures are not as well represented at the third grade. The sharp drop between ninth and twelfth grade reflects in large part the influence of the dropouts. Since they are usually the lower achieving and least motivated students, their loss from the sample of students at the twelfth grade tends to reduce the magnitude of Outcome measure intercorrelations and consequently their common variance. As we shall see later, there may also be some very real changes in the Outcome intercorrelations for twelfth grade schools. Also, when the five additional twelfth grade measures were introduced into the analysis, the percent of common variance dropped to 28. These results suggest that there are influences that reduce the intercorrelation of the Outcome measures without reducing their mutually facilitative effect.

We have seen that the percent of common variance for the Student Body variables and for the School variables remains relatively constant in moving from one grade level to the next. We have also seen that the degree of intercorrelation among the Outcome measures decreases at the higher grade levels, even though it is possible that the outcomes themselves may continue to reinforce each other. It remains to be shown to what extent the correlations of the School variables and Student Body with each other and with the Outcome measures increase at the higher grade levels.

The squared multiple correlations of the School variables with the school Outcomes are given in Table 11.4.2. Here we see that the predictability of the School Outcomes from the set of School variables

Table 11.4.3. - Squared Multiple Correlations of the Student Body Background Variables With the School Outcomes

School Outcome	Squared Multiple Correlation of the Student Body Variables at Grade Level 1*	3	6	9	12
Expectations for Excellence		24	46	52	20
Attitude Toward Life		22	57	58	48
Educational Plans and Desires		19	50	61	47
Study Habits		49	57	74	82
Achievement	43	52	79	82	82

*Outcome measures other than Achievement were not available at the first grade.

Table 11.4.4. - Squared Multiple Correlations of the School Variables With the Student Body Background Variables

Student Body Variable	Squared Multiple Correlation of the School Variables at Grade Level 1	3	6	9	12
Socio-Economic Status	53	61	64	67	74
Family Structure and Stability	44	31	45	42	49
Racial-Ethnic Composition	85	81	83	85	90

increases at the higher grade levels for Attitude Toward Life, Educational Plans, and Desires and Achievement An oscillating but increasing trend is observed for Expectations for Excellence, while a decreasing trend is observed for Study Habits. Thus, while not all of the School Outcomes become more predictable from the School variables as one ascends the grade levels, the trend is for most of the Outcome measures to become more predictable.

Table 11.4.3 gives the squared multiple correlation of the Student Body Background variables with the School Outcomes. There is an increase in the predictability of the School Outcomes from the three Student Body variables through the ninth grade. After that comes a moderate to sharp decrease in the predictability of all Outcome variables except that of Achievement, which remains high at the twelfth grade. As will be seen later there may be some real changes, in addition to the influence of the dropouts, that might account for this sharp drop in predictability.

Table 11.4.4 attempts to show in a slightly different way that the influence of the School variables is related to the nature of the student body. It also shows what aspects of the student body become progressively related to the School variables. As one ascends the grade levels the predictability of the Student Background variables from the School variables increases -- but much more so for Socio-Economic Status than for any of the other measures. This suggests that the Socio-Economic Status (or Composition) of the students plays a greater role in school influences than do the other Student Body background variables.

SUMMARY

We have seen that most of the School Outcome measures become increasingly more predictable from the comprehensive set of thirty-one school variables the longer the student stays in school. We have also seen that these increases are not readily attributable to changes in the composition or degree of intercorrelation of the School variables or to changes in the degree of intercorrelation of the Student Body variables. In addition we have noted that the Student Body variables become ever more highly correlated with the School Outcomes and with the School variables at the higher grade levels. For the relationship between the School variables and the Student Body variables this increase is most pronounced for the Socio-Economic Status (or composition) of the students. Taken together, these trends support the notion that the schools are indeed having an influence on their students.

To be even more conclusive, we would have to show that certain relationships persist even after other influences have been eliminated. Ideally, we should have measurements on the very same students at these different time periods. We could then show that the schools have an influence that is independent of the students' prior experiences. On the basis of the observed trend whereby the Student Body variables become increasingly more correlated with both School Outcomes and School variables we may anticipate that there may be difficulties in equating for these prior experiences. The influence of the schools may in fact be bound up with the prior experiences of their students, especially with experiences related to their different social backgrounds.

11.5. School Influences That Are Independent of Student Body Variables

Schools can be equated for differences in the family backgrounds of their students before being examined for influences on school outcomes. The reasoning behind this procedure is that some of the differences in school outcomes can be attributed to the influence of the different family backgrounds rather than to the influence of the schools. In our analysis, the Student Body variables (B) were used to represent student body influences, and a comprehensive set of thirty-one School variables (S) to represent school influences. The following equation shows how far the influence of the School variables on Outcomes is independent of the Student Body variables:

$$(1) \quad U(S) = R^2(B,S) - R^2(B)$$

U(S) is the portion of the squared multiple correlation that can be uniquely associated with S when it is entered into the analysis with B. It is obtained by subtracting the squared multiple correlation of B, $R^2(B)$, from the squared multiple correlation obtained for both sets of variables, $R^2(B,S)$. A second equation enables one to obtain the unique portions for B in a similar manner:

$$(2) \quad U(B) = R^2(B,S) - R^2(S)$$

$R^2(S)$ is the squared multiple correlation obtained for S, and $R^2(B,S)$ is the squared multiple correlation obtained when both sets of variables are entered into the analysis.

These unique values, as well as the squared multiple correlation for both sets of variables, are given in the upper half of Table 11.5.1 for the Outcome measures that are common to the different grade levels. In the lower half will be found the same values for the twelfth grade Outcome measures.

Table 11.5.1 shows that the U(S) values are small in comparison with the U(B) values for Expectations, Attitude Toward Life, Educational Plans and Study Habits. The same trend appears in the much smaller U(B) values for Achievement. For the special twelfth grade measures, however, the unique portion for S variables greatly exceeds that for B. Even more important, the unique values for B and S are small compared with the squared multiple correlation when both B and S are entered into the regression analysis. This indicates that there is considerable overlap between these two sets of variables in predicting all of the Outcome measures common to the different grade levels. The same holds good for two out of five of the Outcome measures specific to the twelfth grade. For these Outcomes, it appears, the influence of the schools may be bound up with the social background of the students or at any rate their background as we have defined it. A technique that allows one to express this degree of overlap is given in the next section.

Table 11.5.1. - Proportion of Variation in School Outcome Measures Attributable to B and S

OUTCOME MEASURES

Grade Level*	Expectations			Attitude to Life			Educational Plans			Study Habits			Achievement		
	U(S)	U(B)	$R^2(B,S)$	U(S)	U(B)	$R^2(B,S)$	U(S)	U(B)	$R^2(B,S)$	U(S)	U(B)	$R^2(B,S)$	U(S)	U(B)	$R^2(B,S)$
Twelfth	25	06	44	07	14	56	15	19	61	14	40	56	04	08	86
Ninth	11	45	63	05	29	64	06	35	67	04	58	78	05	11	87
Sixth	03	26	49	02	29	58	02	19	52	02	31	60	04	10	83
Third	03	19	26	06	18	27	03	07	22	04	17	53	04	07	56
First													09	05	52

Grade Level*	Percent to College			Percent Non-White to College			Percent to Vocational			Percent Non-White to Vocational			Percent Boy Dropouts		
	U(S)	U(B)	$R^2(B,S)$	U(S)	U(B)	$R^2(B,S)$	U(S)	U(B)	$R^2(B,S)$	U(S)	U(B)	$R^2(B,S)$	U(S)	U(B)	$R^2(B,S)$
Twelfth	19	06	57	18	02	23	25	01	27	20	02	24	24	02	34

*U(S) and U(B) are the unique portions for the School and Student Body (B) variables, respectively. $R^2(B,S)$ is the squared multiple correlation obtained when both sets are entered into the analysis.

11.6 Commonality Analysis: Its Meaning and Application

To express the degree of correlation, overlap or confounding that exists between two sets of variables in predicting a dependent variable we need a coefficient of commonality. Let the coefficient of commonality for sets B and S be C(BS). Then, following Equations 1 and 2 above:

$$(3) \quad C(BS) = R^2(B,S) - U(B) - U(S)$$

This coefficient represents the proportion of variation in the dependent variable that cannot be apportioned to one of the sets and hence is common to the two sets of variables.* This technique for partitioning the variance allows one to express the proportion of variation in a dependent variable that is attributable to one set of variables as the sum of its commonality coefficient and its unique association. Thus:

$$(4) \quad R^2(S) = C(BS) + U(S)$$

and

$$(5) \quad R^2(B) = C(BS) + U(B)$$

The pages that follow give a graphical presentation of the U(S), U(B) and C(BS) values for the different Outcome measures at the different grade levels (the tabular material for these analyses is given in Chapter 5). It is assumed that S and B wield independent influences proportional to the magnitude of their unique values, and may wield additional influences in proportion to the magnitude of C(BS). The terms "independent role" and "independent contribution" denote the independent influences just referred to. The terms "common role" and "common contribution" refer to situations in which we cannot tell to what extent the variance should be attributed to one of the sets, nor the extent to which this variance may represent a cooperative influence of the two sets. This is not to say that all of the relationships reflect causal influences, but only that some of them do. Moreover, the absence of a relationship tends to preclude the possibility of a causal influence.

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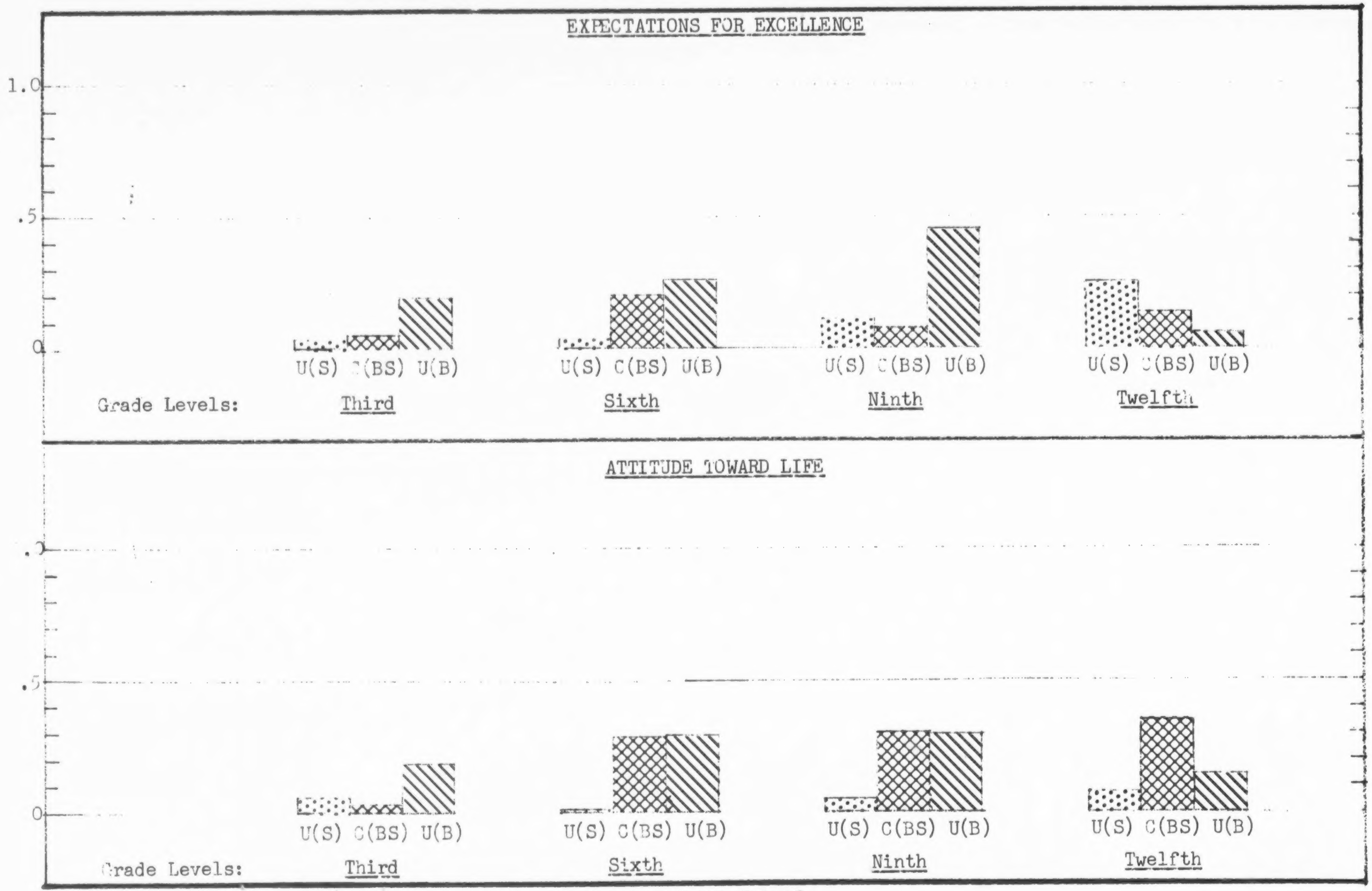
* A mathematical exposition of this technique is given in Appendix II.

Tables 11.6.1 through 11.6.3 depict grade-level trends for Outcome measures common to the different grade levels. Table 11.6.4 presents results for outcome measures specific to the twelfth grade. The height of each bar in these charts represents the magnitude of the commonality coefficient. Since the unique values and commonality coefficient at each grade level sum to $R^2(B,S)$, increases in the height of the bars represent increases in the proportion of an Outcome measure's variation that is accounted for. It will be noted that the relative roles of S and B often change with different grade levels.

Table 11.6.1 shows the grade-level trends for Expectations for Excellence and Attitude Toward Life. For Expectations, B plays an increasingly large role through the twelfth grade, as does the common role of S and B. At the twelfth grade, however, a dramatic reversal occurs: the role of B is greatly diminished, while the independent role of S and its common role with B are increased. Some of this can perhaps be attributed to the influence of the dropouts, who presumably have lower Expectations. Analyses in Chapter 4, 5 and 6 showed that some of it may also be due to increases in the Expectations of students in predominantly non-white schools. For Attitude Toward Life the independent role of B increases through the ninth grade and then diminishes somewhat at the twelfth grade. Again, some of this change at the twelfth grade may be due to the influence of the dropouts. It should be noted, however, that the common role of S and B does show a progressive increase from the lowest to the highest grades.

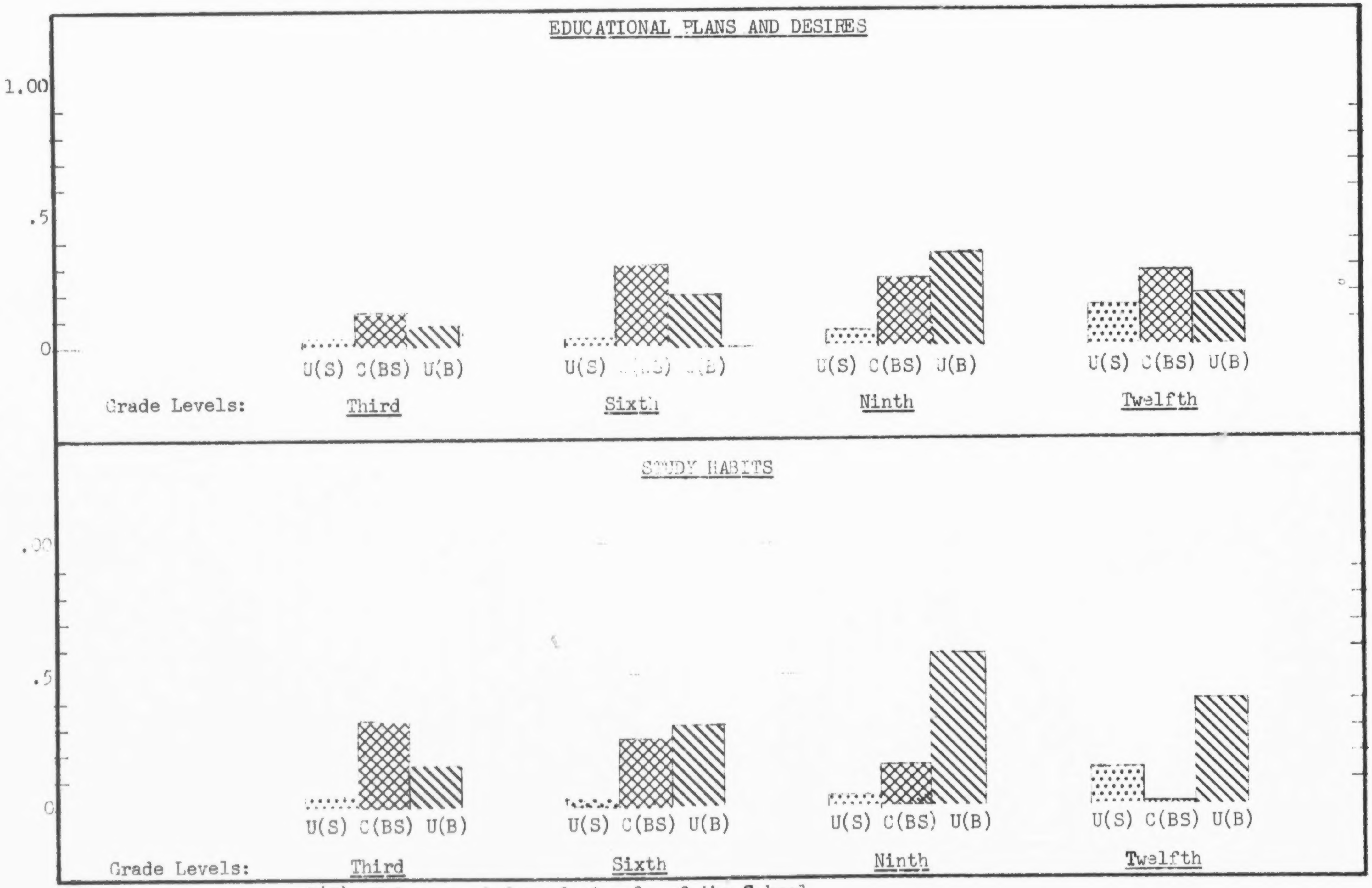
Table 11.6.2 shows the grade-level trends for Educational Desires and Plans, and for Study Habits. An ever greater common role in Educational Plans is played by S and B at the higher grade levels, while the independent role of B increases through the ninth grade and then diminishes somewhat at the twelfth. The independent role of S increases progressively at

Table 11.6.1. - Graphical Representation of the Common and Unique Roles Played by the School and Student Body Variables in the Development of Expectations and Attitude Toward Life



U(S) Unique or independent role of the School.
U(B) Unique or independent role of the Student Body Social Background.
C(BS) Common role of the Student Body Social Background and School.

Table 11.6.2. - Graphical Representation of the Common and Unique Roles Played by the School an
Student Body Variables in the Development of Educational Plans and Study Hab



U(S) Unique or independent role of the School.
U(B) Unique or independent role of the Student Body Social Background.
C(BS) Common role of the Student Body Social Background and School.

the higher grade levels. For Study Habits, however, a very different trend is observed. Here, the common role of S and B progressively diminishes at the higher grade levels, while the independent role of B increases dramatically. The independent role of S increases at the higher grade levels, too, but to a lesser extent. It appears, then, that at the higher grade levels S and B come to play independent roles in the development of Study Habits. For both Study Habits and Educational Desires the shifts that occur from the ninth to twelfth grades undoubtedly reflect the influence of the dropouts, at least in part.

Table 11.6.3 shows the grade-level trends for Achievement. The dramatic increase in the common role of S and B shows that the schools may be having an influence on Achievement that is bound up with the social background of their students. The analyses presented in Table 11.4.4 and in Chapters 4 and 5 suggest that the schools may be producing more growth in Achievement and related attitudes for high Socio-Economic Status and for white students than for low Socio-Economic Status and non-white students.* Socio-Economic Status appears to be more heavily involved in this influence process than does Racial-Ethnic Group Membership or Family Structure.

Table 11.6.4 gives the relative roles played by S and B in the special twelfth-grade Outcome measures. As can be seen from the height of the bar graphs, all of these measures were noticeably less predictable than many of the earlier measures. For Percent of Graduates Going on to a Two or Four Year College, S and B play a large common role, while both S and B play smaller independent roles, the independent role of B being the smallest. A very different trend is observed for Percent Non-White Going on to College, Percent of Total Going on to Vocational Training, and Percent of Non-White Going on to Vocational Training. For these Outcomes the common role of S and B and the independent role of B are negligibly small. The greatest contribution to these three Outcomes is from the independent

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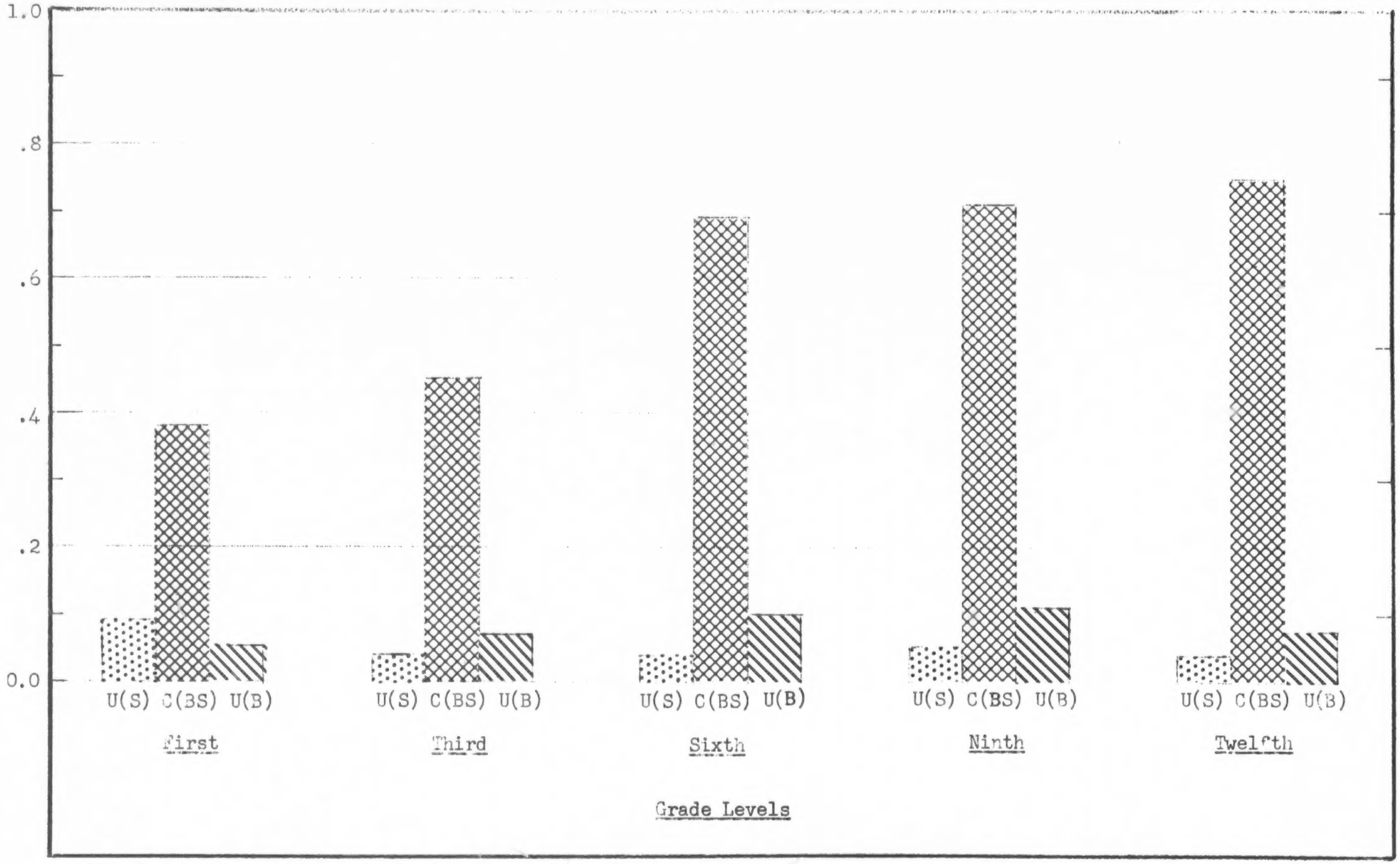
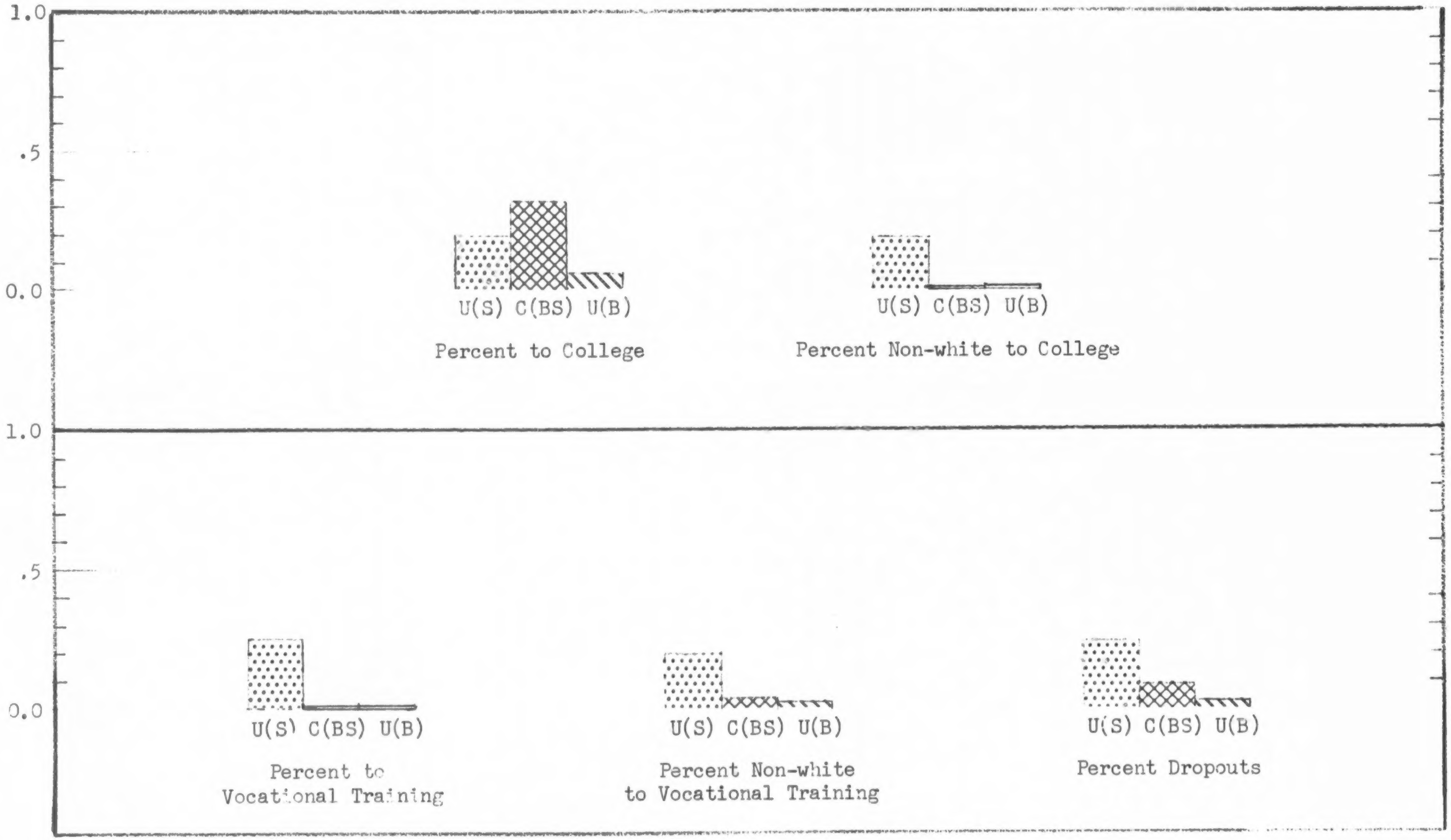
* This conclusion is supported by other recent studies (see especially Shaycoft, 1967).

Table 11.6.3. - Graphical Representation of the Common and Unique Roles Played by the School and Student Body Variables in the Development of Achievement



U(S) Unique or independent role of the School.
U(B) Unique or independent role of the Student Body Social Background.
C(BS) Common role of the Student Body Social Background and School.

Table 11.6.4. - Graphical Representation of the Common and Unique Roles Played by the School and Student Body Variables in the Development of the Special Twelfth Grade Outcomes



U(S) Unique or independent role of the School.
U(B) Unique or independent role of the Student Body Social Background.
C(BS) Common role of the Student Body Social Background and School.

role of S. For Percent of Tenth Grade Students Who Drop Out of School it will be seen that S plays both a large independent role and a common role with B. The independent role of B is negligible.

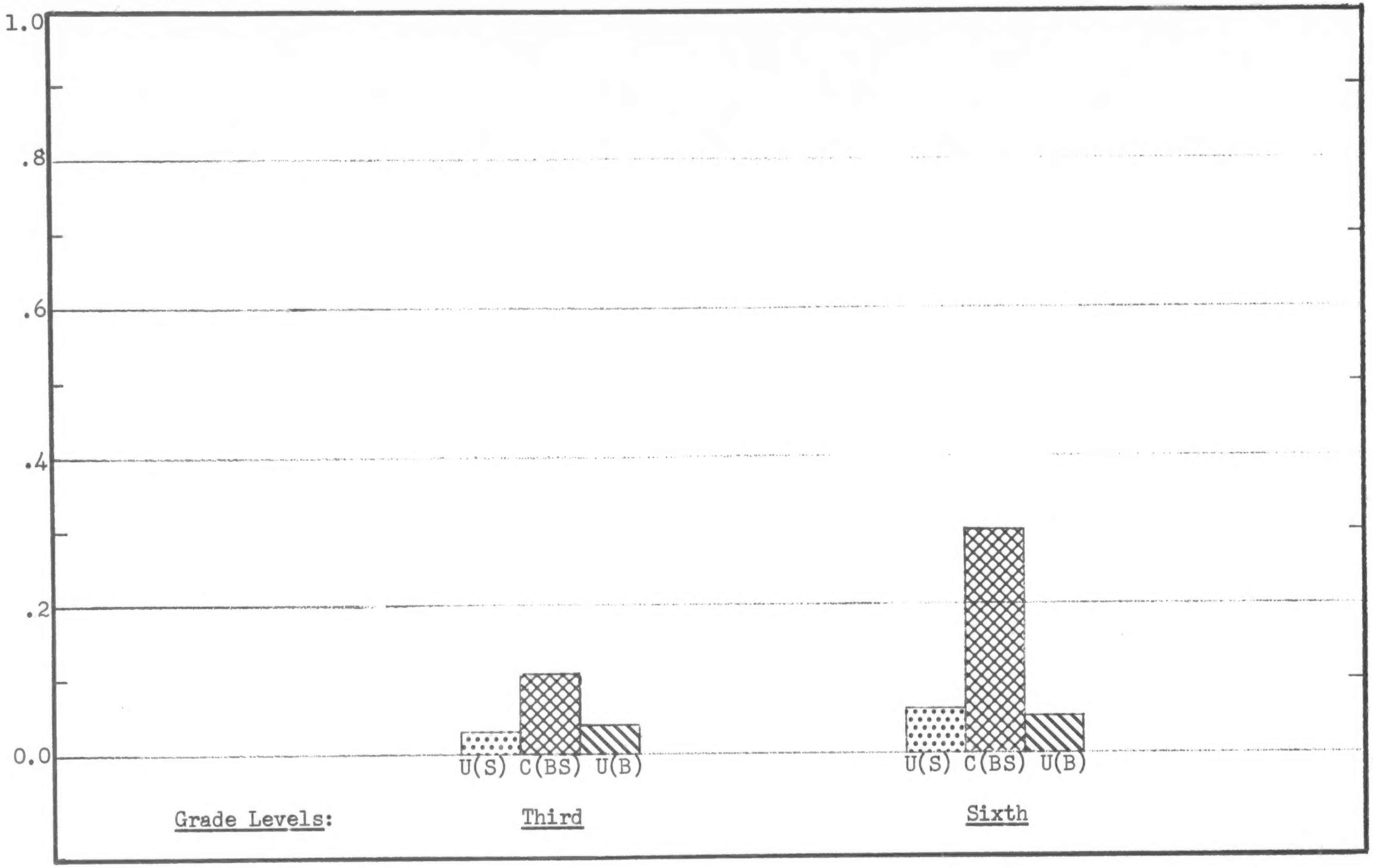
We also tried dividing S into the three subsets of School Personnel and Personnel Expenditures, Pupil Programs and Policies, and Facilities. Our purpose was to see if any of these subsets was playing a greater role than the others in influencing school outcomes. For Study Habits the same diminishing trend at the higher grade levels was observed for the subsets of S as had been observed for S itself. For Expectations for Excellence, Attitude Toward Life, Educational Plans, Achievement and Percent Going on to College, the subset of S that was shown to play the greatest independent role was School's Personnel and Personnel Expenditures. It also had a common role with B. The subsets concerned with Pupil Programs and Facilities usually made a contribution only when combined with the Student Body and School Personnel variables. For the Percent Non-White Going on to College, Percent Total and Percent Non-White Going on to Post-Secondary Vocational Training, and Percent of Dropouts these three subsets of S each tended to play a greater independent role than S as a whole. There was little indication of a common role being played by these subsets, except possibly for that of the Student Body and School Personnel variables with the Percent of Dropouts.

SUMMARY

The results of the analyses discussed in section 11.6 show that the Student Body variables (B) may play a moderate-to-large role in influencing Expectations for Excellence, Attitude Toward Life, Educational Desires and Plans, and Study Habits. This is not to deny that the School variables (S) may also play a role. But it is not nearly as large a one as that of the Student Body variables.

We have also seen that there is a certain amount of variance that is shared by S and B, and that the extent of this sharing varies with the grade level and Outcome under consideration. Both S and B play rela-

Table 11.7.1. - Graphical Representation of the Independent and Common Roles Played by the School and Student Body Variables in the Development of Gain in Achievement



U(S) Unique or independent role of the School.
U(B) Unique or independent role of the Student Body Social Background.
C(BS) Common role of the Student Body Social Background and School.

tively small independent roles in achievement. There may, however, be a dramatic interplay of S and B in influencing Achievement. These results suggest that neither the kinds of students a school gets initially, nor its resources, as we have defined them, is the sole influence on school outcomes. Instead, both play a role together. Our results seem to show that, for all of these Outcome measures, the school is more successful with white students and students from higher socio-economic strata than with non-white students and students from lower socio-economic strata. For the remaining Outcome measures -- those concerned with Percent Going to College or Vocational Training and Percent of Dropouts -- a much greater role is played by S than by B. Perhaps by the time students reach the twelfth grade the school has more of an influence on them than at the lower grade levels. Certainly, this would be a reasonable inference about those who complete twelfth grade.

The next section attempts to show that much the same kinds of processes operate through time as we have observed for different points in time.

11.7. School Influences Independent of Entering Student's Achievement Level

Further support would be given to the grade-level trends presented in the previous section if we could show that the same kinds of processes operate through time as we have observed for different points in time. Some of the schools included in this study provided Achievement and questionnaire information on their sixth-, third-, and first-grade students. It was felt that if the nature of the student body did not vary too much between these grades, then the first-grade students could be considered similar to the third-grade and sixth-grade students when they first entered the school. Such an assumption would enable one to correct the achievement levels of the third and sixth grades for their achievement levels when they entered first grade. Any differences remaining after this correction could then be related to different aspects of the school and student body.

Analyses based on this assumption were in fact carried out; their results are given in Chapter 8. Commonality analyses determined the independent and common roles of S and B in Achievement gains. A graphical representation of these commonality analyses is given in Table 11.7.1. Here we see that even after the third and sixth grades have been equated for their entering Achievement levels, increasingly common and independent roles are played by S and B in the development of gain in Achievement. Another way of saying this is that the longer the students remain in school, even though they start out at the same initial level of achievement, the more predictable their gain in Achievement becomes from the common role of S and B.

Analyses were also conducted using the three subsets of S that we have called F, T, and P. As in the earlier analyses, the greatest independent role, as well as the greatest common role with B, was found for T. The contributions of P and F were negligible.

Do these comparisons of different grades at the same point of time give us the same kinds of results that we would have obtained by comparing the same students at different points in time? A study by Shaycoft (1967) suggests that they do. Shaycoft found that the same students from higher socio-economic strata showed greater gains on later testing than did the same students from lower socio-economic strata, even after all students had been equated for their initial achievement levels. This confirms our earlier observation that the social composition of the student body is related to the students' gains in achievement. We showed that the students of schools with higher Socio-Economic Status and predominantly white students made greater gains than the students of schools with lower Socio-Economic Status and predominantly non-white schools. We have also shown that the school has both an independent role in promoting achievement gains and a very large common role with the students' social background attributes.

11.8. The Role of Multiple School Outcomes

Analyses presented in Chapter 4 showed that the School Outcome measures were substantially correlated with one another. Analyses in Chapter 6 showed that the School Outcome measures were substantially correlated with one another even after associations attributable to the size of the school and the students' social background had been removed by correlation techniques. We therefore decided to analyze the role played by multiple School Outcomes when combined with the set of Student Body variables, on the one hand, and the comprehensive set of thirty-one School variables, on the other. An overview of these analyses is presented in this section.*

Our basic purpose here was to define a third set of variables that we called O, or Other Outcomes. We want to include this third set in the analyses with S and B. At each grade level, therefore, O was made up of measures other than the dependent variable that could be classified as outcomes. At the sixth grade, for example, where Expectations -- an Outcome -- was used as the dependent variable, the set of Other Outcomes consisted in Attitude Toward Life, Educational Plans and Desires, Study Habits, and Achievement. At the twelfth grade the Outcome set was expanded to include the five special measures we used here.† Consequently in the results that follow the set of Other Outcomes for the third, sixth and ninth grades is composed of four variables, while that for the twelfth grade is composed of nine variables.

Commonality analyses using S, B, and O are presented in the following graphs. Since with three sets of variables there are a larger number of commonalities than for two sets, only those commonalities are presented that involve O. For example, $R^2(O)$, or the squared multiple correlation for O, can be partitioned as follows:

$$(6) \quad R^2(O) = C(BSO) + C(BO) + C(SO) + U(O)$$

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* See Chapter 9 for the full analyses.

† In Chapter 9 analyses were tried both with and without these special measures. For simplicity, however, we have concentrated here on analyses that did use them.

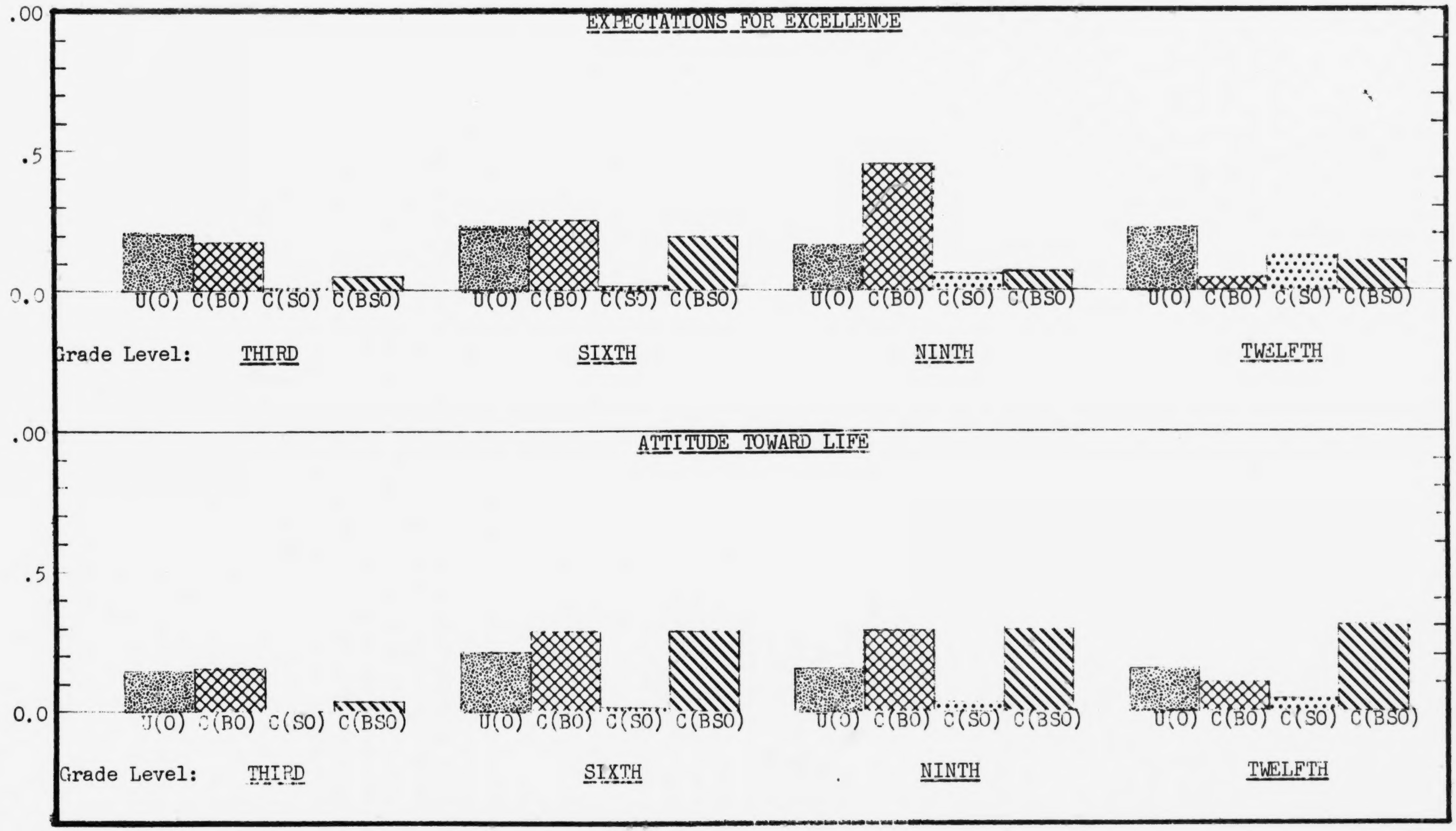
In this equation C(BSO) is the predictable variance in the dependent variable common to all three sets; C(BO) is the variance common to the B and O sets; C(SO) is the variance common to the S and O sets; and U(O) is the unique portion of the O set in predicting that dependent variable.

These values are presented in the tables that follow. As before, the height of each bar graph represents the magnitude of the commonality coefficient. Increasingly large values for all coefficients represents an increase in predictability.

Table 11.8.1 presents these values for Expectations and Attitude Toward Life. For Expectations the unique or independent role of O stays about the same at the different grade levels. The common role of B and O, on the other hand, increases through the ninth grade and then drops sharply at the twelfth grade. The common role of BSO increases at the sixth grade and then tapers off at the higher grade levels. For Attitude Toward Life the independent role of O increases through the sixth grade and then recedes somewhat. The common role of BSO increases at the higher grades while the common role for B and O increases through the ninth grade and then decreases somewhat. For both Expectations and Attitude Toward Life the common role of S and O is very small, although it does increase slightly at the higher grade levels.

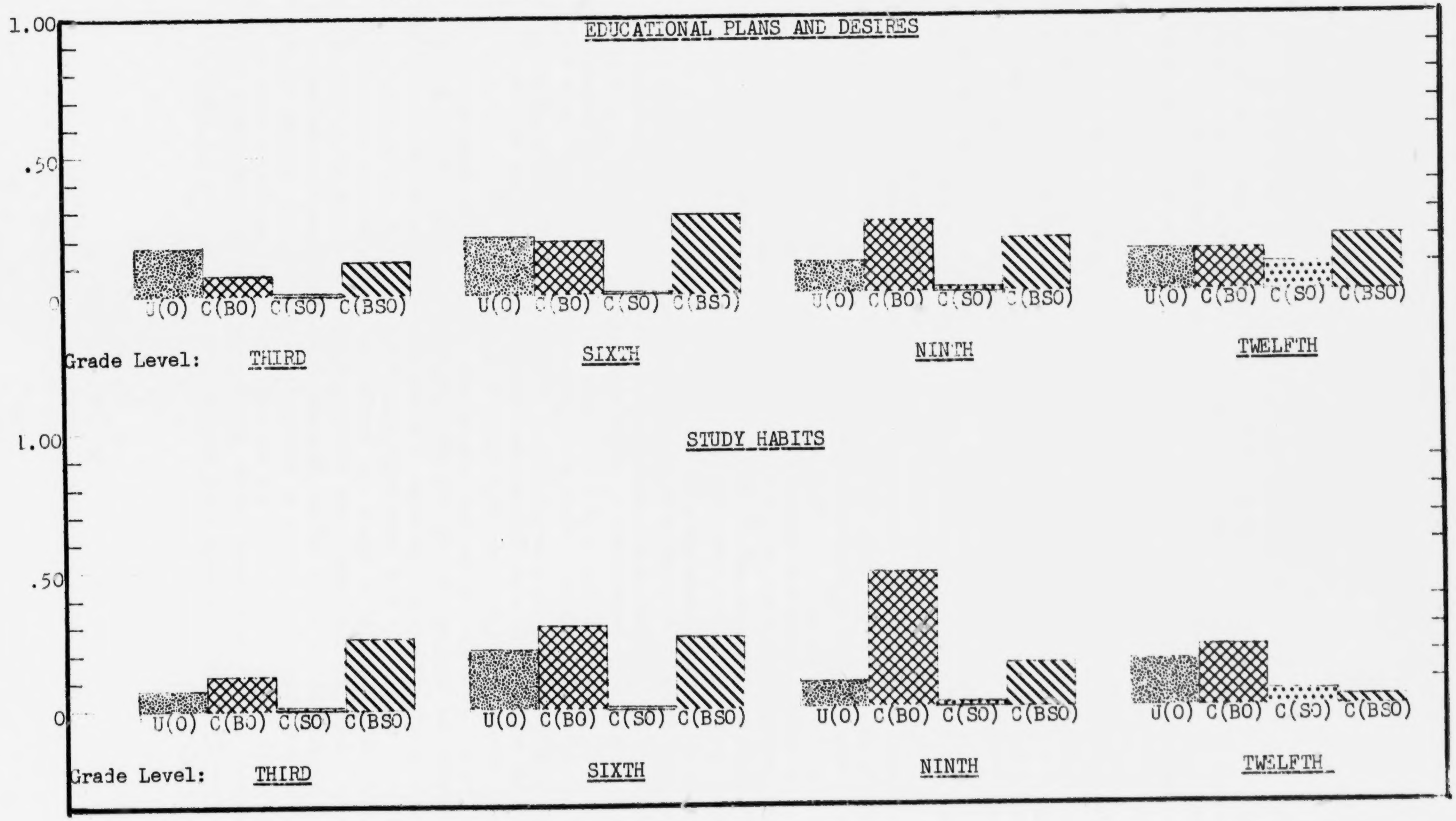
Table 11.8.2 gives the grade-level trends for Educational Plans and Study Habits. While the independent role of the Outcome set remains fairly similar over the grade levels, the common role of B and O increases through the ninth grade and then decreases. The common role for BSO increases through the sixth grade and then decreases somewhat at the ninth and twelfth grade. For Study Habits the common role of B and O increases through the ninth grade and then decreases, while the common role for BSO progressively decreases with ascending grades. The independent role of O oscillates, increasing from the third to sixth grade, then decreasing at the ninth only to increase again at the twelfth. As with the previous dependent variables, the common role of S and O is negligible at the lower grades, but does increase slightly at the higher ones.

Table 11.8.1. - Graphical Representation of the Independent and Common Roles Played by Other School Outcomes in the Development of Expectations and Attitudes Toward Life



U(O)	Unique or independent role of the Other Outcomes.
C(BO)	Common role of the Student Body and Other Outcomes.
C(SO)	Common role of the School and Other Outcomes.
C(BSO)	Common role of the Student Body, School and Other Outcomes.

Table 11.8.2. - Graphical Representation of the Independent and Common Roles Played by the Other School Outcomes in the Development of Educational Plans and Study Habits



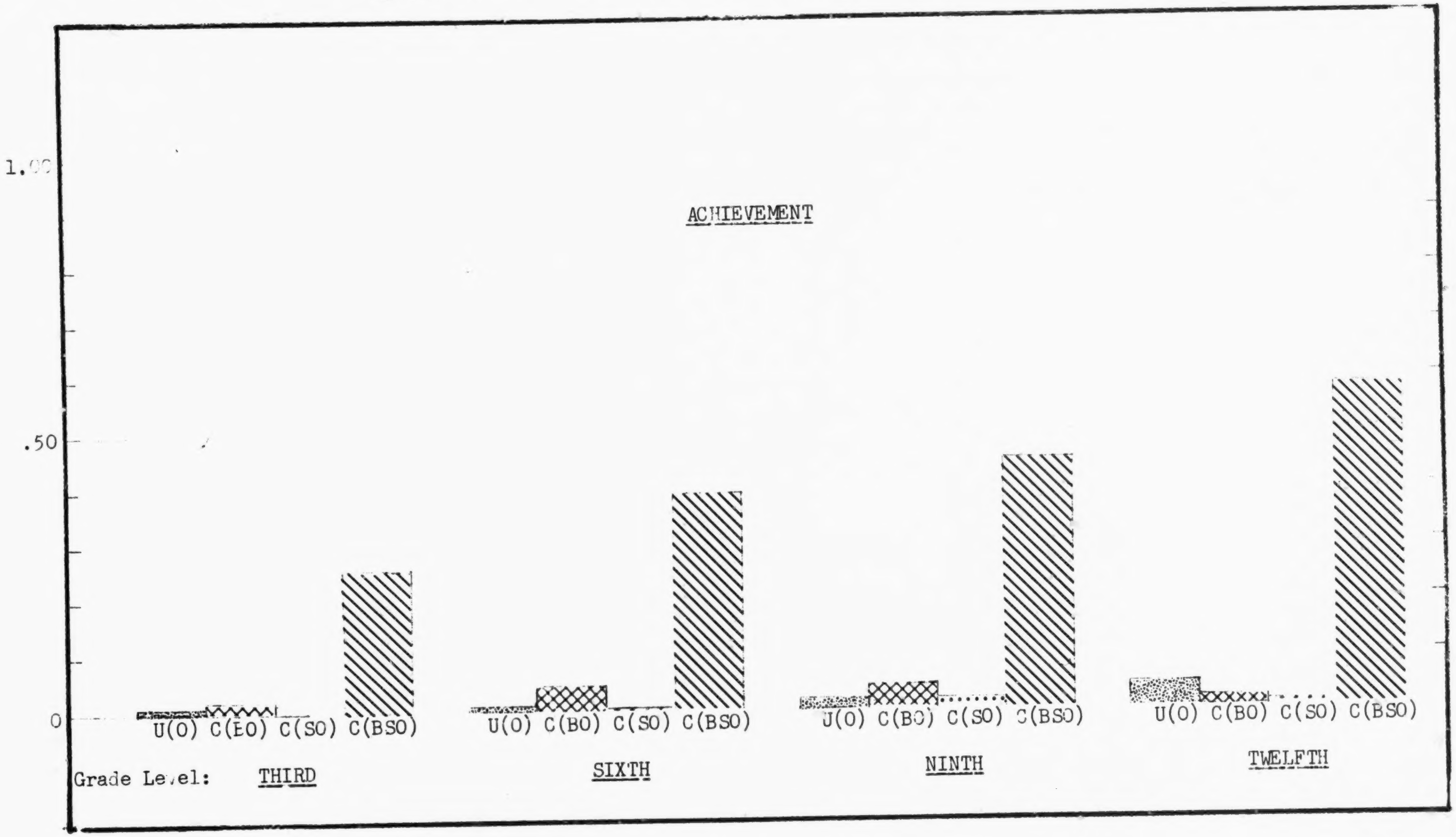
U(O) Unique or independent role of the Other Outcomes.
C(BO) Common role of the Student Body and Other Outcomes.
C(SO) Common role of the School and Other Outcomes.
C(BSO) Common role of the Student Body, School and Other Outcomes.

Table 11.8.3 gives the grade-level trends for Achievement, which are dramatically different from those of the previous dependent variables. For Achievement virtually all of the predictable variance is explained by the common role of BSO. This role increases markedly at the higher grade levels.

Table 11.8.4 presents the results for the special twelfth-grade outcome measures. For Percent of Graduates Going on to College the largest contributions are made by the independent role of O and its common role with B and S. For Percent Non-White Going on to College and Percent Non-White Going on to Post-Secondary Vocational Training the independent role of O is still greatest. There is also a slight common role here of O with S Percent Going on to Vocational Training and the Percent of Dropouts show negligible relationships with O.

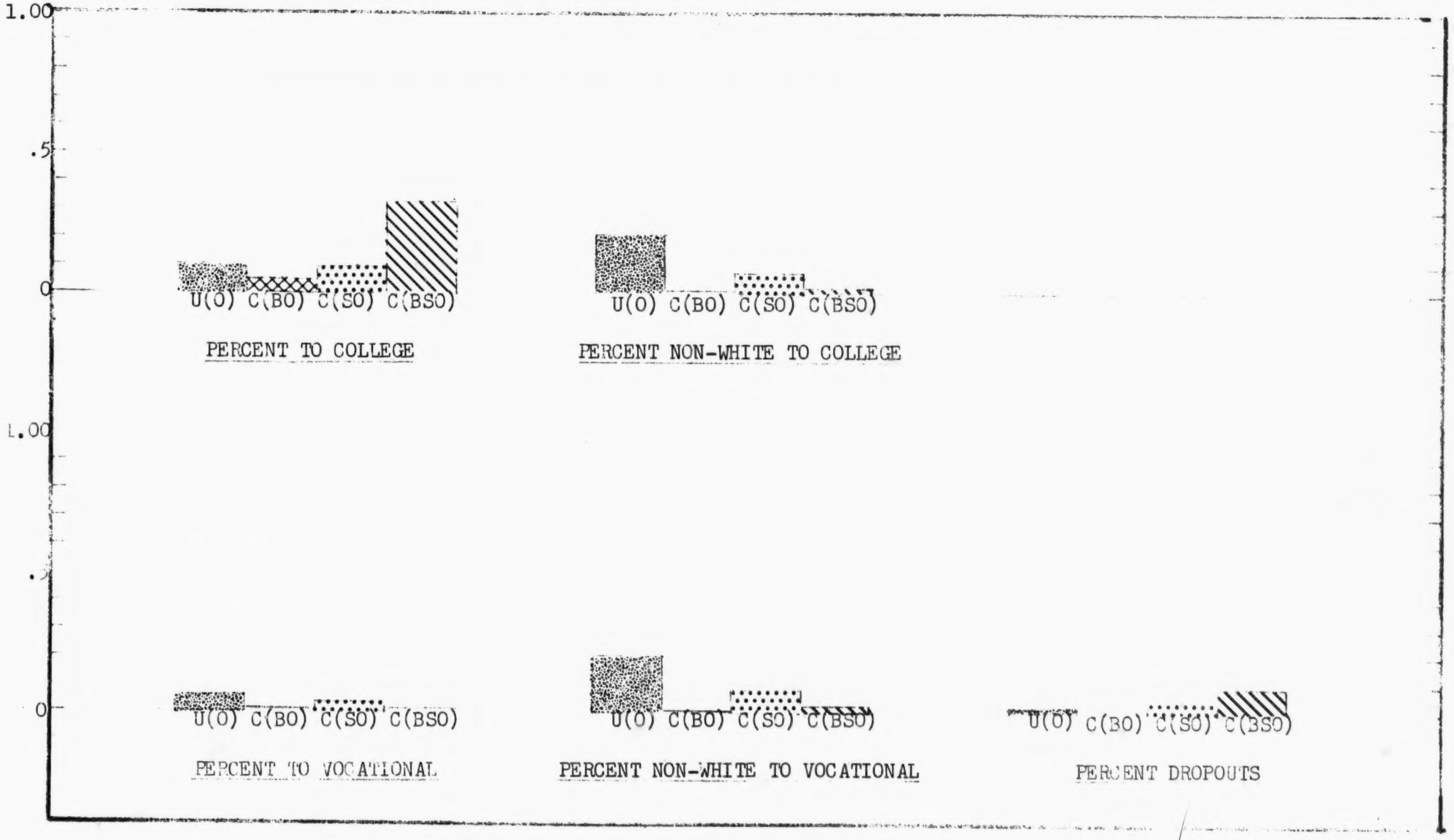
We have noted that for Expectations, Attitude, Educational Plans and Study Habits there is a moderate independent role of O and a moderate to large common role of O with B and of all three sets of variables together. The magnitude of these values varies with the grade level under consideration. The common role of S and O is usually small for these attitudinal and motivational measures. For Achievement, if any influence is wielded by O at all it is through its common role with B and S. The independent role of O is negligible for Achievement. For the special twelfth-grade measures the Other Outcomes (O) play a small independent role for Percent Going on to College and Percent Non-White Going on to College, and Percent Non-White Going on to Vocational Training. For the Percent Going to College O has a moderate common role with B and S. The correlations among the Outcomes show that schools that do well on one school outcome tend also to do well on other school outcomes. The commonalities show that these outcomes are bound up with the student body's social background, as we have defined it. Nor is this all. The independent and common roles suggest that these multiple outcomes are mutually reinforcing and perhaps even mutually facilitating.

Table 11.8.3. - Graphical Representation of the Independent and Common Roles Played by the Other School Outcomes in the Development of Achievement



U(O)	Unique or independent role of the Other Outcomes.
C(BO)	Common role of the Student Body and Other Outcomes.
C(SO)	Common role of the School and Other Outcomes.
C(BSO)	Common role of the Student Body, School and Other Outcomes.

Table 11.8.4. - Graphical Representation of the Independent and Common Roles Played by the Other School Outcomes in the Development of the Special Twelfth Grade Outcomes



U(O)	Unique or independent role of the Other Outcomes
C(BO)	Common role of the Student Body and Other Outcomes
C(SO)	Common role of the School and Other Outcomes
C(BSO)	Common role of the Student Body, School and Other Outcomes

We could delete the "perhaps" from this assertion if we could show that these outcomes became more highly correlated over time. Table 11.4.1 shows that although there was in fact a trend of this sort it was not pronounced, and tended to diminish at the higher grade levels. It was suggested that opposing trends such as dropouts, response errors and real changes related to the Expectations of non-white students operated here to mask what might otherwise have been a more discernible trend.

11.9. School Personnel and Personnel Expenditures

The two sets of variables most heavily involved in school outcomes, in addition to the Student Body variables, were the Other Outcomes, discussed above, and the set we have called School Personnel and Personnel Expenditures, or T. In view of T's importance we decided to conduct a special analysis by expanding it to include some more personnel-related variables, and then breaking it up into subsets. We hoped to see if some of the subsets were more heavily involved in school outcomes than others.

The three subsets so formed were:

Fiscal or Expenditure Related Variables: a subset of five variables pertaining to the teacher's and principal's salary levels and training and to the school's specialized staff and services, if any

School Personnel's Prior Background and College Attended: a subset of eleven variables referring to the school personnel's Experience, kind and racial composition of College Attended, Localism, Socio-Economic Background, Racial-Ethnic Group Membership and Vocabulary Score

Teaching Situation: a subset of eleven variables referring to scope and severity of school problems (e.g. destruction of property, physical violence), the school's reputation among other educators in the area, the rate of teacher turnover, the presence of a tenure system, use of examinations in appointing teachers, the teacher's view of how hard the students try to achieve, the teacher's preference for high ability students, percent white of teacher's students, and several others.

In order to depict the common role played by these sets with the social background of the students, Student Body Social Background (B) was included in these analyses as the fourth set.

The Outcome measures or dependent variables were the same as those used in earlier analyses, viz.: Expectations for Excellence, Attitude Toward Life, Educational Plans and Desires, Study Habits, Achievement, and the five special twelfth-grade outcome measures (p. 307). Regression and commonality analyses* were conducted using these outcome measures and the previously mentioned four sets of variables.

The four-set commonality analyses showed that for Expectations for Excellence, Attitude Toward Life, Study Habits and Achievement, Fiscal or Expenditure Related Variables made a very small if not non-existent contribution. Its influence with the other three sets was also virtually non-existent. However, both School Personnel's Prior Background and Teaching Situation were strongly involved with Student Body Social Background in predicting these outcomes. The role played by these sets was usually a common one, although there were also some independent roles at times.

For the special set of twelfth-grade outcome measures the relative as well as the independent contribution of School Personnel's Prior Background and Teaching Situation was somewhat increased. Nevertheless, the same trends tended to prevail as for the outcomes below twelfth grade. Most of the possible influences on the twelfth-grade outcomes could be attributed to the independent and common role of the same sets of variables, though the Student Body variables generally played a lesser role.

These results suggest that moderate-to-large increases in personnel expenditures (that is, increases in staff salaries and in the specialized staff) may result in only small improvements in school outcomes. As for the possible effects of very large increases, all we can say on the basis of this report is that we do not know what their result would be. Large-scale educational experimentation would be needed to answer this and other questions of the same type.

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* A full account of these analyses is given in Chapter 10.

The set of Fiscal or Expenditure Related Variables did not appear to have much of a relationship with the school outcomes. Yet the motivational and attitudinal outcomes, at least, were moderately predictable from School Personnel's Prior Background and Teaching Situation, while Achievement was highly predictable from these same sets. Wondering what it was about these sets that led to their heavy involvement in school outcomes, we examined the correlation of the variables comprising the sets with the school outcomes. We found that the following variables were consistently related to the outcomes:

(1) the teacher's view of his teaching conditions (an index called Teaching Conditions)
(2) the teachers' Racial-Ethnic Group Membership
(3) the teacher's Vocabulary Score
(4) Percent of White Students at Teacher's Undergraduate Institution
(5) Percent White of Teacher's Students
(6) Socio-Economic Status of the students
(7) student's Family Structure
(8) Racial-Ethnic Composition of the students.

In the analyses summarized in this section variables 2 through 4 on the above list were included in School Personnel's Prior Background, variables 1 and 5 were included in the Teaching Situation, while variables 6 through 8 were included in Student Body Background. The important points to note are:

(1) These variables are correlated both with one another and with the School Outcomes.
(2) It is these correlations that account, in part, for the common role of the different sets of variables.

These considerations suggest that if we could reduce the dependence of schools on the social background of their students and personnel (that is, if we could achieve a greater socio-economic and racial balance between students and staff), educational kinds of variables -- the teacher's training, for instance, or the school's physical facilities -- might then play a greater role in school outcomes.

We also studied the development of variables for individual teachers. These variables had already been shown to be related, as aggregate variables, to School Outcomes. For example, the average Vocabulary Score attained by the teachers in a school had been shown to be related to the average Achievement of the students in the school. Our purpose this time was to study the variables correlated with the individual teacher's Vocabulary Score when the teachers were not aggregated or averaged by school.

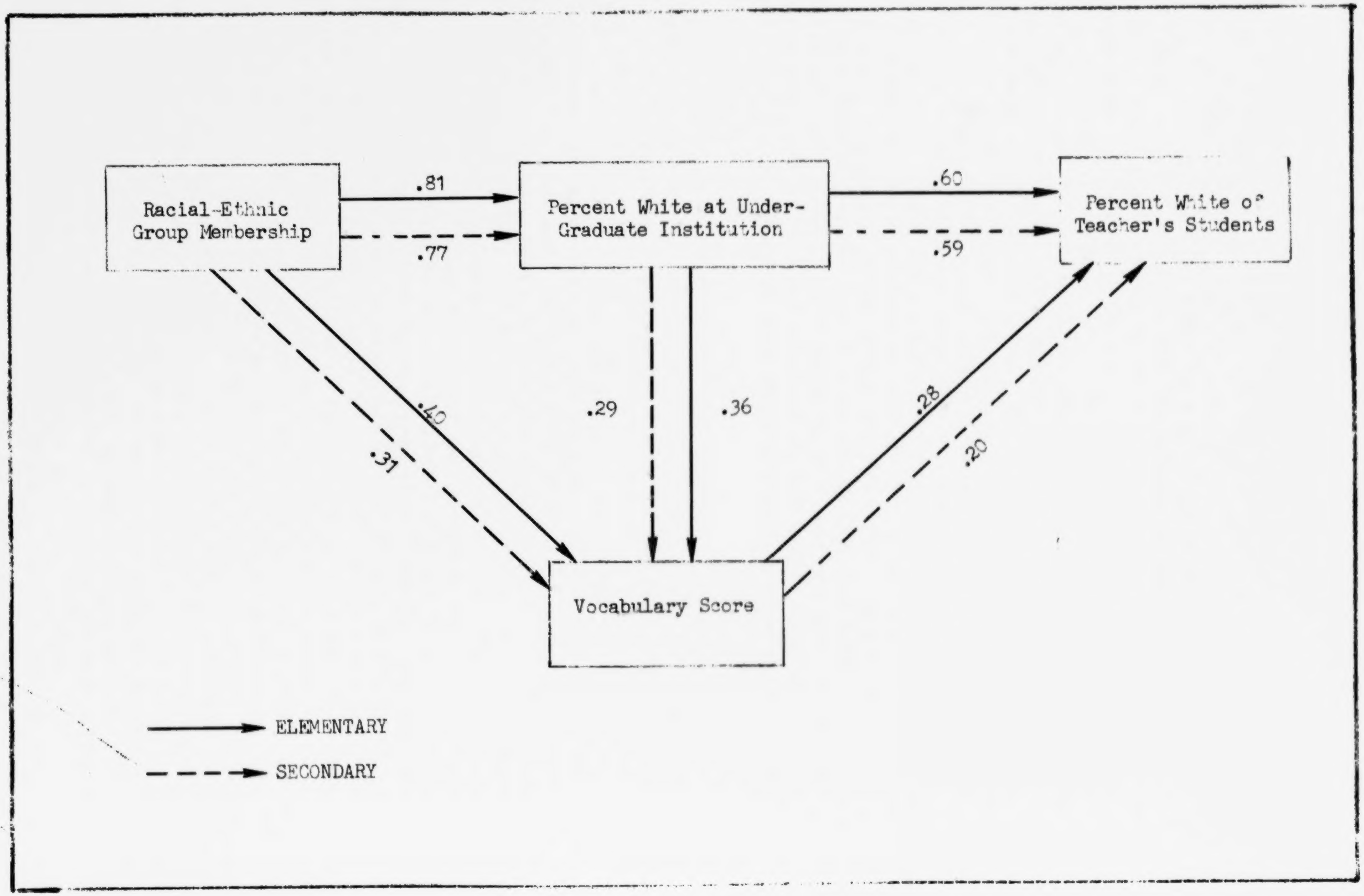
We also studied the percent of total variance for different teacher variables that was associated with the schools in which they were located. The variables most highly associated with school differences were those that reflected conditions of racial and ethnic imbalance: the racial composition of the teacher's College Attended, Percent White of Teacher's Students, and Teacher's Racial-Ethnic Group Membership. Still other variables that had moderate-to-high associations with school differences were Teacher's Annual Teaching Salary, Vocabulary Score, and Teaching Conditions (the teacher's own view of how much effort the students put forth, the relative absence of school problems such as racial tension, physical violence against teachers, etc.).

Correlations among the different teacher variables, using the individual teacher as the unit of analysis, showed that those variables concerned with the Teacher's Racial-Ethnic Group Membership, experience in racially imbalanced situations, and Vocabulary Score were most frequently associated with the other teacher variables.

Vocabulary Score was shown to be related to a number of school outcomes as an aggregate variable, and to be correlated with many of the individual teacher variables. We therefore decided to classify these variables under three heads corresponding to successive stages in the career development of a teacher, and then see what part was played by variables at each stage in the development of Vocabulary score. The three sets of variables or stages were Teacher's Background, Characteristics of Schools Attended, and Teaching Situation. Variables related to teacher's Racial-Ethnic Group Membership, Percent of White Students at Teacher's Undergraduate Institution, and Percent White of Teacher's Students were first included in the analysis and then excluded from it in order to show what influence they had in the prediction of Vocabulary Score. We found that it was the racial-ethnic variables that had the greatest influence. The same variables were also giving rise to the common roles of the three "career" sets. When these sets were analyzed separately with Vocabulary Score it was found that Teacher's Racial-Ethnic Group Membership played the greatest independent role, as well as a large common role with Percent White of Undergraduate Institution and Percent White of Teacher's Students.

A graphical illustration of these results is given in Table 11.9.1. The solid and dotted lines represent the correlational relationships for Elementary and Secondary teachers respectively, and the magnitude of the correlations are given adjacent to each line. We can infer from this table that there is a color-caste system in the teaching profession. By this is meant that non-white students attend predominantly non-white educational institutions from which some emerge as teachers who teach predominantly non-white students. The system is caste-like inasmuch as it is not only self-perpetuating but probably self-reinforcing as well. Mechanisms of self-reinforcement may be present in the perpetuation of differential verbal skills. Thus, non-whites tend to be born into the lower strata of society where there are fewer family- and school-related experiences that facilitate the development of verbal skills acceptable to the schools. These non-whites in turn attend predominantly non-white educational institutions where there is less of a motivational and achievement orientation (section 4.3.7). The result is a less adequate preparation for teaching. This poorer preparation is then carried into a predominantly non-white teaching situation where it is passed on to rising generations of non-white students, including non-white future teachers.

Table 11.9.1 - Graphical Illustration of the Correlational Relationships That Exist Between the Teacher's Racial-Ethnic Group Membership, Racial Composition of Teacher's Under-Graduate Institution and of Teacher's Students and Teacher's Vocabulary Score


Racial-Ethnic Group Membership
.81
.77
Percent White at Under-Graduate Institution
.60
.59
Percent White of Teacher's Students
.40
.31
.29
.36
.28
.20
Vocabulary Score
ELEMENTARY
SECONDARY

11.10 Overview and Hypotheses.

The general results of these analyses can be summarized in the form of hypotheses. These are not hypotheses in a rigorous logical sense; in some cases they include brief explanations of what is being hypothesized, and in no case have they been reduced to the most economical formula we could have devised. We believe, however, that they give a fair idea of what we have so far been able to discover. It should be noted that all the terms used here have precise technical meanings in the context of the study. Thus "students' social background" refers to the three student body variables of Socio-Economic Status, Family Structure, and Racial-Ethnic Composition. The terms "school" and "school influences" refer to the comprehensive set of 31 school variables "Attitudinal and motivational outcomes" refers to the outcomes at each grade level other than Achievement. "Generalized favorable performance" and "performing well" refer to the correlations that exist among the different outcome measures. An "independent" role, influence or contribution and a "distinguishable" influence both refer to the unique portions. A "common" role, influence or contribution and an "indistinguishable" influence refer to the commonalities.

HYPOTHESIS 1

The influence of the schools is bound up with the social background of the students that they get initially. Very little influence of the schools can be separated from the social background of their students, and very little of the influence of social background can be separated from the influence of the schools. The schools, as they are currently constituted, produce more learning and foster greater motivation when they have a high proportion of students who: (1) come from the higher socio-economic strata rather than from the lower socio-economic strata; (2) have both parents in the home rather than only one or neither parent in the home; (3) are white or Oriental-American rather than Mexican-American, Puerto-Rican or Negro.

HYPOTHESIS 2

The social background of the students usually plays a greater independent role in the development of all school outcomes than do the independent influences of the school -- until the twelfth grade. At the twelfth grade the independent influence of the schools is greater than the independent influence of the student's social background for most of the motivational and attitudinal outcomes, but not for achievement. What happens at the twelfth grade is that the influence of the student's social background for achievement still outweighs the school influence.

HYPOTHESIS 3

For all the attitudinal and motivational outcomes, the school has a common influence with student social background that varies in magnitude with the particular outcome and grade level under consideration. For achievement, however, the school has a common influence with student social background that increases the longer the the students stay in school and that is much greater than their independent contributions.

HYPOTHESIS 4

Schools that perform well on one school outcome also tend to perform well on other school outcomes. In other words, favorable performances tend to facilitate and reinforce one another. For the attitudinal and motivational outcomes, this generalized favorable performance has a large independent contribution as well as a common influence with the student's social background. For achievement, the influence of this generalized favorable performance is manifested in common with the school characteristics and the student's social background.

HYPOTHESIS 5

The attributes of the school most heavily involved in school outcomes, both independently and in common with student social background, are those concerned with the school's personnel.

HYPOTHESIS 6

The school's physical facilities, pupil programs, and policies have small-to-negligible independent influences on school outcomes. However, they do have slight common contributions in conjunction with student's social background and school personnel.

HYPOTHESIS 7

Variables concerned with the school's personnel expenditures, such as teaching salaries, have negligible relationships with school outcomes, either independently or in common with the other school variables and the student's social background.

HYPOTHESIS 8

Teacher attributes highly related to school outcomes were those reflecting a teacher's experiences in racially imbalanced educational settings. Non-white teachers attend predominantly non-white educational institutions and teach predominantly non-white students. Non-white educational settings tend to have associated with them lower levels of achievement and motivation, as well as less favorable socio-economic and family conditions. The result is a less adequate preparation than that received in predominantly white institutions.

One aspect of these findings can be summarized as follows:

> For both students and teachers, the American educational system reflects the structure of American society. It therefore tends to perpetuate and even further increase the differential learning experiences that students bring to the educational setting by virtue of their birth.

11.11 Suggestions for Future Research

It should be clear by now that, in the experimentally uncontrolled situation called "real life," it is well-nigh impossible to separate the influence of environmental resources that facilitate the development of achievement from the motivation to achieve. We must conclude, then, that none of our analyses can tell us in any specific way how much of a change will occur in certain school outcomes if certain school resource inputs are systematically altered. In our opinion, specific answers to questions of this type can be obtained only by studying the performance of students in situations where the outcomes and resource inputs can be specified precisely, and in which the resource inputs can be manipulated systematically. Survey research, whether longitudinal or conducted at one point in time, can be useful only in suggesting hypotheses for further research. It is of little value in demonstrating the possible efficacy of different educational interventions and innovations.

This should not be construed to mean that cross-sectional and longitudinal surveys are useless. When coupled with large-scale educational experiments they can be powerful tools for evaluating the effectiveness of different educational programs. For example, even this survey, through further analysis of how schools and teachers influence students with different backgrounds, might suggest the optimal social composition of a student body for obtaining a desired level of achievement. This optimal value might then be validated by experimental research with groups having this composition.

11.12. Some Issues and Recommendations

11.12.1. Do schools influence their students' achievement levels and attitudes?

An earlier report entitled Equality of Educational Opportunity (Coleman et. al., 1966) concluded that the schools were having very little influence on the students that was independent of their family background. This was misconstrued by some people to mean that the schools were not having an influence, and that they were therefore not important. There were even those who argued that not only was it not important which school a student attended but that it wasn't even necessary for them to attend school.

We have attempted to show that the schools do indeed have an important influence on their students. It appears, however, that much of this influence is bound up or manifested in conjunction with the student's social background. If we had been able to study students who had had their schooling interrupted for a substantial period, or who had matured without the benefit of any schooling at all, we would have been able to demonstrate what we have here shown only through extended analysis. A study of Negro children in Prince Edward County, Virginia, where the schools were closed for several years, does just what we were unable to do. These investigators (Green et al., 1964) found that children who had gone for a few years without ever having started school could not even hold a pencil, let alone follow detailed instructions or take a test. The test performance of children whose schooling had been interrupted was compared with that of Negro children in a neighboring county who were of similar socio-economic and rural background. It was found that the children whose schooling had been interrupted exhibited severe educational retardation, particularly on tests more closely related to school curricula such as spelling and arithmetic. On an intelligence test the scores of these children were 15 to 30 points lower than those of the children in the adjacent county who had continued in school.

Clearly, the schools do have important influences. Just as clearly, one of the goals in improving the schools must be to increase the influence they have on their students that is independent of the students' social background -- their educational influence, in short.

11.11.12. How can the educational influence of the schools be increased?

There are a variety of educational innovations that are currently being experimented with and still others that are awaiting trial. However, unless there exists a systematic framework of objectives within which the effectiveness of such programs can be assessed, it will be difficult to say just how beneficial they are or can be. Even after the value of new techniques has been demonstrated, and the techniques incorporated in the operating situation, their performance requires periodic monitoring.

One example of a systematic approach to the management of schools in terms of a number of performance criteria has been developed for the State of Pennsylvania and is currently being implemented by them (see Educational Testing Service, "A Plan for Evaluating . . . .", 1965). An approach such as this may in and of itself increase the influence that schools have on their students. But in any case it would be indispensable. If a school cannot specify how much and in what ways it has improved, then how can it justify its claims to school board members, parents of students, etc. that is has improved? It seems likely, then, that management of schools in terms of explicit objectives and performance criteria is one major innovation that may result in improved school performance.

Another such innovation can be put in the form of a question, as follows. How can a society that is committed to equality for all, in all aspects of its life, expect to achieve that equality when its educational enterprise not only reflects but perpetuates an inequitable social structure? Our analyses have suggested that the extraordinary aggregation of students into schools on the basis of their race, ethnicity, and socio-economic background precludes the attainment of an open society. Indeed, if the dependence of the schools on the social background of their students could be lessened (viz. if student bodies were more balanced or better mixed in terms of their social backgrounds) then, in the language of our analysis, educational kinds of variables might make a greater relative contribution to students' achievement levels and motivation.

We have not attempted in this report to delve into the influence of the schools on subgroups of their students. But a recent review of the research on desegregation by Weinberg (1968) suggests that more racially balanced schools can enhance the achievement levels of Negro students without detracting from those of the whites. In view of these considerations, it is suggested, more racially and socio-economically balanced schools will have a greater influence on their students. How best to achieve this balance might itself be a subject of inquiry or experimentation. For example, open housing(perhaps coupled with an income supplement to make the housing purchasable), relocation of school boundaries, and busing of students from imbalanced schools can all result in more homogeneous student bodies. The effectiveness of these different approaches in terms of such criteria as racial tension, student learning, etc. could then be ascertained.

There is no doubt that a wide variety of different approaches to the improvement of school influences need to be experimented with. Some of these are concerned with the acceleration of the learning rates of slow learners through more individualized instruction. Still others are concerned with introducing more competition into schools by having competing school systems (Coleman, 1967; Clark, 1968). Another approach might focus on the skills, attitudes and training of the teacher as they impinge upon student performance. Yet another might focus on parental involvement in the child's school work and perhaps even on parental control of the schools. In short, there does not appear to be any single variable, as of this writing, by which we can transform the achievement levels of lower-achieving schools so that they can "catch up" with the higher-achieving schools in a few years. Rather, we are embarking upon a longer voyage into an only partially explored ocean. There is some consensus among the crew as to where we would like to go, but no one is quite sure of the best way to get there.

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Appendices

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APPENDIX I

Some Mathematical and Empirical Properties of Criterion Scaled Variables

by

Albert E. Beaton, Jr.

APPENDIX I

by

Albert E. Beaton, Jr.

CRITERION SCALING

Summary. A procedure is presented for scaling arbitrary variables with reference to an external criterion so as to maximize the correlation between the scale of variable and criterion. The significance test of the correlation is shown to be identical to an analysis of variance. The procedure is particularly useful when the scaled item is unknown for some members of a specific sample. The procedure is extended to allow for interactions between several scales.

Problem. Many studies in the social sciences have one or several well behaved (equal interval, normal) dependent variables and a host of independent variables which have questionable numerical properties. For example, the EOS report used educational tests as dependent variables and a series of questionnaire items to measure independent variables such as economic status, school facilities, attitudes, etc. The purpose of the data analysis was to show the amount of the test score variances that could be associated with changes in the independent variables through regression and analysis of variance techniques. Unfortunately, as is usually the case with questionnaire items, some of the questionnaire items represent nominal scales (e.g., father's occupation, race), some are of unequal interval (number of books in home, hours watching television), and some were irrelevant to a substantial portion of the sample (e.g., what track are you in), and, as usual, many respondents chose not to answer many of the questions.

The question here is: How do we scale (or code) the questionnaire items so as to maximize the amount of variance associated with the variable or, equivalently, to maximize the correlation between the scaled independent variable and the criterion?

The straightforward way of handling such data is to encode each independent variable as a set of dummy variables and proceed with an analysis of variance using regression techniques. This procedure avoids assumptions of equal interval scaling and linearity of regression. Dummy variables can also be used to encode terms for interactions between independent variables. But the dummy variable approach proliferates variables so as to make the analysis of a moderate number of questionnaire items impractical even with modern computers. For example, the EOS Ninth Grade Questionnaire had 115 items which would generate around 500 dummy variables for first order effects and more than 10^{64} dummy variables if all possible interactions are included. Since there is little hope for orthogonal decompositions with questionnaire items, matrices longer than those manipulatable with modern computers would have to be created and inverted.

The purpose of this paper is to present a technique for scaling the independent variables such that they correlate maximally with the criterion. In the simplest case, the procedure is equivalent to an eta (η) coefficient; in larger cases, it is shown to approximate a complete analysis of variance. The procedure is practical with modern computers.

Technique. Let us assume that we have a dependent variable Y which is continuous along an equal interval scale and an independent variable X of arbitrary scale type. X may be categorical, ordinal, unequal interval, or perhaps along an equal interval continuum. We would like to predict the scores Y from the scores X such that the error of estimation is minimal in a least squares sense. We will assume that whatever the form of X there are a finite number of categories into which the various sample members fall; for example, a categorical variable such as race would have a finite number of categories and a continuous variable such as "years of education" might be lumped into categories as integers for none, elementary, high school, etc. We wish to find a scale value C_j to assign to the members of the jth category of variable X such that the error in estimating Y is minimal over all categories of X.

Our least squared criteria is that

$$\sum_{j=1}^{k} \sum_{i=1}^{N_j} (Y_{ij} - C_j)^2$$

be a minimum. By elementary least squared we see that

$$C_j = \bar{Y}_j$$

that is, the scale values C_j which satisfy our criterion is the mean of the Y scores for those persons who fell in category j. The scale value for X is, therefore, the mean of Y for those who fell in that category of X. This method of predicting a quantitative variate from an attribute was shown by Guttman.7/

7/ Guttman, L. in Horst, P., "The Prediction of Personal Adjustment", Social Science Research Council, New York., (1941).

Using the means of Y as a scale value of X has several interesting properties. The mean of Y is of course identical to the mean of X. The intercept and slope of the regression line of Y on X will be zero and one, respectively, thus the regression equation is

$$\hat{Y} = 0 + 1X = X$$

The correlation between Y and X is easily shown to be the correlation ratio (η coefficient)

$$r^2_{YX} = \eta^2_{YX} = \frac{\sum_{j=1}^{k} N_j (\bar{Y}_j - \bar{Y})^2}{\sum_{j=1}^{k} \sum_{i=1}^{N_j} (Y_{ij} - \bar{Y})^2}$$

and the F test, testing the significance of the correlation coefficient

$$F^{k-1}_{N-k} = \frac{\eta^2_{YX}}{1 - \eta^2_{YX}} \cdot \frac{N - k}{k - 1}$$

is identical to the F test which would be computed in performing a one-way analysis of variance using the Y as dependent variable and the categories of X as treatments.

This technique is in fact an alternate method of computing a one-way analysis of variance. As such, it may be used as a method of computing an analysis of variance on a high speed computer when a correlation or regression program is available, but an analysis of variance program is not. The results will, of course, also be identical to those computed in the more complicated dummy variable approach to the one-way analysis of variance; however, the dummy variable approach generalizes to multi-factor designs, whereas this method does so only for orthogonal designs.

An alternate scaling method is to encode the categories of X as deviations,

$$C'_j = \bar{Y}_j - \bar{Y}$$

which will result in the regression equation

$$\hat{Y} = 1 + 1X .$$

This coding scheme has the same general properties as the above but seems somewhat more natural when we have many different X variables.

Since we have allowed X to by any arbitrary scale, we have no difficulty in handling those sample members for whom the score on the original X scale was unknown. (We cannot compensate for missing Y values since this is our criterion.) Missing X values are treated as another category; thus the scale value for those with unknown X is the mean of Y for all persons with unknown X. We use, therefore, the information that we have no information on X to assist us in the estimation of Y.

This technique of scaling variables from the mean of a criterion can also be used in non-linear fitting. Let us presume for the moment that X is a continuous variable and that Y is related to it in some non-linear fashion. We may divide the X continuum into intervals, compute the mean criteria for each interval, and correlate the criterion with the means. Although this procedure will not compute the parameters of the non-linear function, it does avoid the need to specify the function and will ordinarily result in a higher correlation and smaller residuals than most non-linear techniques. In fact, the only time when non-linear methods can result in smaller residuals is when the segmentation of the X continuum is so coarse that the fitted curve comes closer to the points in the interval than does the mean.

Multiple Independent Variables. If we have more than one independent variable, it is clear that we can scale each using this criterion scaling technique. We can compute a vector of correlation between the independent variables and the criterion and each will have the properties of the simple correlation. In some instances this can be an effective way of computing a large number of one-way analyses of variance.

However, the criterion scaling method does not in general work for a multifactor design, although it does work in certain special cases. The special case is where the independent variables are orthogonal, i.e., when the correlation between two scaled independent variables is zero. A sufficient (but not necessary) condition for orthogonality is that the scatter diagram between the unscaled independent variables have proportional cell numbers. This will of course seldom happen in questionnaire analyses since scatter diagrams represent the population distribution of the two independent variables; in designed experiments, however, orthogonality is sought for and thus not uncommon.

If the orthogonality condition holds, we may proceed to compute a multifactor analysis of variance by computing successive partial correlations. The variance of Y will then be successively reduced through each partialing operation. The reduction in the variance of Y by partialing an independent variable is the sum of squares due to that independent variable and, when divided by the appropriate number of degrees of freedom, produces a mean square to be used in the numerator of an F statistic. The error term will be the residual variance of Y after all independent variables are partialled out.

If we wish to include interaction terms, we may scale the interaction between the two independent variables, X and Z, say, by

$$C_{jj'} = \bar{Y}_{jj'} - \bar{Y}_{j.} - \bar{Y}_{.j'} + \bar{Y}_{..}$$

where $C_{jj'}$ is the scaled value for the jth category of X and the j' category of Z. If the intercorrelations among the scales including the interaction term are zero, then a complete analysis of variance including interaction can be computed. This relationship can be extended to any order interaction.

If the intercorrelations among several independent variables are not zero, then an analysis of variance will not be exact. This results from the fact that although the scaling technique forces the cell means to fall on a straight line in the first order regression, it cannot assure that residuals from a fitted line will also be exactly linear. It is clear that the error term will be correct since we can fit the cell means exactly by using interaction terms. For example, if we have scaled X and Z (such that the mean of each is zero) and we have coded the interaction between X and Z, then the regression equation will be

$$\hat{Y} = 1 + 1X + 1Z + 1\widehat{XZ}$$

where $\widehat{XZ}$ is the interaction term and $\hat{Y}$ is exactly the mean of the appropriate XZ cell. However, the mean squares computed for X, Z, and $\widehat{XZ}$ will not be exact.

Just how inexact the effects will be is unknown but under investigation at this time. We would surely prefer an exact solution if such were possible, but in many studies with a large number of independent variables an exact solution is impossible. Thus, this seems to be a useful method since it is exact for a one-factor analysis and some multifactor analyses and we may suspect that the loss of efficiency is not too gross when the intercorrelations among the scales is not high.

Interpretation. Criterion scaling does not attempt to produce an absolute scale for a factor but instead to scale the factor with reference to an external criterion. Thus the scale for a father's occupation might be quite different depending on whether it was scaled with reference to a child's measured reading ability or his salary or something else. We should, therefore, think of the scale only with reference to the criterion.

APPENDIX II

Partitioning the Explained Variation in a Regression Analysis

by

Carl E. Wisler

APPENDIX II

by

Carl E. Wisler

In exploratory research, regression analysis is often applied to nonexperimental, multivariable data in an attempt to reveal relationships between a dependent variable and a set of regressor variables. Conceptually, the variation in the dependent variable may be separated into three parts, (i) that which can be attributed to the regressor variables individually, (ii) that which can be attributed to the regressor variables as a group and (iii) the residual variation which is unexplained by the regression. Parts (i) and (II) together comprise the total variation explained by the regression. Since part (i) is composed of the so-called unique sums of squares[1] it will be referred to as the unique portion of the explained variation. The purpose of this note is to describe a method for partitioning the nonunique portion of explained variation (i.e., part (ii)).[2] The motivation for doing so is the promise of a more complete understanding of the relationship of the dependent variable and the regressor variables. Since the procedure for partitioning the nonunique part may be regarded as an extension of a method for obtaining the unique sums of squares we will begin with a discussion of the latter.

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[1] Also called the extra or added sums of squares.

[2] The partitioning method described herein was proposed for this study by A. M. Mood, formerly Assistant Commissioner for Education, National Center for Educational Statistics. The interested reader should also see the similar approach developed independently by R. G. Newton and D. J. Spurrell ("A Development of Multiple Regression for the Analysis of Routine Data", Applied Statistics, Vol. 16, No. 1, 1967). For a more theoretical approach which leads to the same partitioning see W. W. Rozeboom ("The Theory of Abstract Partials: An Introduction", Psychometrika, Vol. 33, No. 2, 1968).

One measure of the variation in the dependent variable is the sum of squares of deviations of the observations from the mean. More specifically, let Y_i denote the i^{th} observation of the dependent variable and let $\bar{Y}$ be the mean of m observations. Then

$$S(Y) = \sum_{i=1}^{m} (Y_i - \bar{Y})^2$$

is the sum of squares of the deviations.

If a regression analysis is carried out using, say, three regressor variables the predicted value of Y is:

$$\hat{Y} = b_o + b_1X_1 + b_2X_2 + b_3X_3$$

Given a set of observations, X_{i1}, X_{i2} and X_{i3}, one can then estimate the corresponding value of the dependent variable, i.e., $\hat{Y}_i$. The amount of variation which is explained by the regression on X_1, X_2 and X_3 is

$$S(X_1X_2X_3) = \sum_{i=1}^{m} (\hat{Y}_i - \bar{Y})^2$$

and the proportion of the total variation which has been accounted for by the regression is

$$R^2_{Y(X_1X_2X_3)} = \frac{S(X_1X_2X_3)}{S(Y)}$$

which is the square of the multiple correlation coefficient. The residual variation which is unaccounted for by the regression will be denoted as

$$\sum_{i=1}^{m} (Y_i - \hat{Y}_i)^2$$

The procedure for obtaining the unique contribution of, say, X_1 to the sum of squares is to regress Y against X_2 and X_3. This yields $S(X_2X_3)$, the variation accounted for by the variables X_2 and X_3.

The unique sum of squares associated with X_1 is now defined to be

$$\gamma(X_1) = S(X_1X_2X_3) - S(X_2X_3)$$

Thus $\gamma(X_1)$ represents the additional explained sum of squares when X_1 is added to the regression last. (In actual computation $\gamma(X_1)$ can be computed in another way so that it is not necessary to run two complete regressions.)

Using Table 1 we may now look again at our way of classifying the total variation. At this stage of the development the nonunique portion is shown simply as the difference between the total variation and the other two known components. Before proceeding to the analysis some interpretive remarks may be helpful.

Table 1

Classification of the Variation	Sum of Squares
Unique Portion	$\gamma(X_1) + \gamma(X_2) + \gamma(X_3)$
Nonunique Portion	$S(Y) - \sum_i (Y_i-\hat{Y}_i)^2 - \gamma(X_1) - \gamma(X_2) - \gamma(X_3)$
Residual	$\sum_i (Y_i-\hat{Y}_i)^2$
Total	$S(Y)$

The unique contributions of the variables are often calculated because they provide an indication of the relative importance of the several regressor variables in explaining the dependent variable. They are potentially misleading, however, because they neglect the nonunique portion of explained variation. A closer examination of how this variation arises from the nonorthogonality of the regressors will illuminate the problem.

Let X_i and X_j now be column vectors of observations on the i^{th} and j^{th} variables expressed as deviations from the mean. If there are m observations these will be m-dimensional data vectors. Two such vectors are said to be orthogonal if $X_i'X_j = 0$, that is if the vectors are at right angles to one another in m-space. In general, the cosine of the angle between the vectors is equal to the correlation coefficient between the two variables. If a set of data vectors are mutually orthogonal then they are uncorrelated with one another and the unique sums of squares will add up to the total explained sum of squares. In other words, each regressor variable is bringing new information to the regression.

If the regressors are to some extent redundant, however, we have a departure from orthogonality. The pattern of intercorrelations among the regressor variables then determines the degree of departure from orthogonality; when it is considerable the condition is known as multicollinearity.[2] The nonunique portion of explained variation is then nonzero and the problem of determining the contributions of individual variables is inherently ambiguous. We are now, however, in a position to describe a way of partitioning the nonunique variation which can be an aid to interpreting the results of regression analyses.

For ease of exposition, the following discussion of the partitioning procedure will be restricted to three independent variables. The equations required for the n-variable case will be summarized later.

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[2] In the extreme multicollinearity case, a data vector can be written as an exact linear combination of other data vectors. This condition makes regression analysis impossible because matrix inversion cannot be carried out.

First, we note that the expression for the unique contribution of the i^{th} variable is

$$\gamma(i) = S(ijk) - S(jk)$$

For simplicity of notation we let i denote X_i, j denote X_j, etc; the dependent variable is indicated by 0. Here and subsequently in the three variable case i,j,k = 1,2,3 and $i \neq j \neq k$. This measure may be standardized to yield

$$(1)\quad U(i) = \frac{\gamma(i)}{S(0)} = R^2_{0(ijk)} - R^2_{0(jk)}$$

U(i) has been referred to as a unique R^2, a marginal R^2 or, for reasons which will soon be apparent, a first-order commonality coefficient. From now on we shall restrict ourselves to standardized measures.

Unique R^2 is a measure of the effect of adding a given variable to a regression; it may be directly extended to two variables in the sense that $R^2_{0(ijk)} - R^2_{0(k)}$ is a measure of the effect of adding the variables X_i and X_j to the regression. We may express this by writing,

$$(2)\quad R^2_{0(ijk)} - R^2_{0(k)} = U(i) + U(j) + C(ij)$$

where C(ij) is that part of the difference in squared multiple correlation coefficients which may be associated with X_i or X_j. It may be regarded as that part attributable to X_i and X_j in common, or for short, the commonality coefficient of X_i X_j. In particular, since there are two regressor variables involved it will be referred to as a second-order commonality coefficient.

Rearranging equation (2) provides us with a definition of second-order commonality coefficients, viz.

$$(3)\quad C(ij) = R^2_{0(ijk)} - R^2_{0(k)} - U(i) - U(j)$$

The definition is recursive in that the first-order commonality coefficients are defined by equation (1).

In analogy with equation (2) we may write the proportion of variance accounted for by all three variables

$$(4)\quad R^2_{0(ijk)} = U(i) + U(j) + U(k) + C(ij) + C(ik) + C(jk) + C(ijk)$$

Then rearranging equation (4) we have the definition of the third-order commonality coefficient

$$(5)\quad C(ijk) = R^2_{0(ijk)} - U(i) - U(j) - U(k) - C(ij) - C(ik) - C(jk)$$

Looking at equations (1), (3) and (5) now, the commonality terms on the right side of this set of equations can be eliminated to yield

$$(6)\quad U(i) = R^2_{0(ijk)} - R^2_{0(jk)}$$

$$(7)\quad C(ij) = -R^2_{0(ijk)} + R^2_{0(ik)} + R^2_{0(jk)} - R^2_{0(k)}$$

$$(8)\quad C(ijk) = R^2_{0(ijk)} - R^2_{0(ij)} - R^2_{0(ik)} - R^2_{0(jk)} + R^2_{0(i)} + R^2_{0(j)} + R^2_{0(k)}$$

The foregoing way of expressing the commonality coefficients will be referred to as the reduced form.

Using the commonality definitions in equations (1), (3), and (5), the squared multiple correlation coefficient associated with a regression can be written in an interesting form. Taking equations (3) and (5) and solving for $R^2_{0(k)}$ gives:

$$(12)\quad R^2_{0(k)} = U(k) + C(ik) + C(jk) + C(ijk)$$

Solving equations (1) and (5) for $R^2_{0(jk)}$ gives:

$$(13)\quad R^2_{0(jk)} = U(j) + U(k) + C(ij) + C(ik) + C(jk) + C(ijk)$$

And solving equation (5) for $R^2_{0(ijk)}$ gives:

$$(14)\quad R^2_{0(ijk)} = U(i) + U(j) + U(k) + C(ij) + C(ik) + C(jk) + C(ijk)$$

The squared multiple correlation coefficient for any given regression is thus the sum of all the commonality coefficients associated with any of the regressor variables.

Up to this point we have been concerned primarily with the mechanics of partitioning the explained variation of a regression analysis. The elements of the partitioning have been called commonality coefficients; they have been defined in equations (1), (3) and (5) and written in reduced form in equations (6), (7) and (8). The way in which the explained variance is partitioned by the commonalities is expressed in equations (12), (13) and (14). We now want to show how the commonalities are related to some more familiar coefficients of correlational analysis, viz., part correlations. These relationships will provide a useful interpretation of commonalities.

We begin with the reduced form and consider three regressor variables which, for specificity, will be labeled 1, 2, and 3. From equation (6) the first-order commonality coefficients are then

$$(15a) \qquad U(1) = R^2_{0(123)} - R^2_{0(23)}$$

$$(15b) \qquad U(2) = R^2_{0(123)} - R^2_{0(13)}$$

$$(15c) \qquad U(3) = R^2_{0(123)} - R^2_{0(12)}$$

written as:

$$\text{(16a)} \quad C(12) = -R^2_{0(123)} + R^2_{0(13)} + R^2_{0(23)} - R^2_{0(3)}$$

$$\text{(16b)} \quad C(13) = -R^2_{0(123)} + R^2_{0(12)} + R^2_{0(23)} - R^2_{0(2)}$$

$$\text{(16c)} \quad C(23) = -R^2_{0(123)} + R^2_{0(12)} + R^2_{0(13)} - R^2_{0(1)}$$

and from equation (8) the third order commonality coefficient is seen to be:

$$\text{(17)} \quad C(123) = R^2_{0(123)} - R^2_{0(12)} - R^2_{0(13)} - R^2_{0(23)} + R^2_{0(1)} + R^2_{0(2)} + R^2_{0(3)}$$

The goal is to express these commonalities in terms of part correlations which are defined as correlations between residual and unmodified variables. For example, correlating the variable 0 with the residual of 1 regressed against 2 yields the part correlation of 0 and 1 with 2 partialed out of 1. In terms of zero-order correlations this part correlation can be written as

$$r_{0(1.2)} = \frac{r_{01} - r_{02}\, r_{12}}{\sqrt{1 - r^2_{12}}}$$

DuBois[3/] gives the relationship between part correlations and the multiple correlation coefficient. When there are three independent variables we may write:

$$\text{(18)} \quad R^2_{0(123)} = r^2_{03} + r^2_{0(2.3)} + r^2_{0(1.23)}$$

[3/] P. H. DuBois, Multivariate Correlational Analysis. New York: Harper and Brothers, 1957.

If the variables are partialed out in a different order other relationships are obtained, e.g.

(19) $$R^2_{0(123)} = r^2_{03} + r^2_{0(1.3)} + r^2_{0(2.13)}$$

When there are two independent variables we may write, e.g.

(20) $$R^2_{0(23)} = r^2_{03} + r^2_{0(2.3)}$$

From equations (15a), (18) and (20) it may be seen that the first-order commonality coefficient for variable 1 is the square of a part correlation, i.e.

(21) $$U(1) = R^2_{0(123)} - R^2_{0(23)} = r^2_{0(1.23)}$$

and in a similar way we have

(22) $$U(2) = R^2_{0(123)} - R^2_{0(13)} = r^2_{0(2.13)}$$

To express higher order commonalities as part correlations it is concenient to use a more general result. If p stands for a set of independent variables and q is the same set but with the i^{th} variable deleted, then it may be seen from DuBois' equations that

(23) $$r^2_{0(i.q)} = R^2_{0(p)} - R^2_{0(q)}$$

If there are k variables in the set q then $r_{0(i.q)}$ is a k^{th} order part correlation.

Now rewriting equation (16a) as

$$(24) \qquad C(12) = (R^2_{0(13)} - R^2_{0(3)}) - (R^2_{0(123)} - R^2_{0(23)})$$

and using equation (23) we obtain

$$C(12) = r^2_{0(1.3)} - r^2_{0(1.23)}$$

An equivalent form would be

$$C(12) = r^2_{0(2.3)} - r^2_{0(2.13)}$$

Rewriting equation (17) as

$$C(123) = \left[R^2_{0(1)} - (R^2_{0(13)} - R^2_{0(3)})\right] - \left[(R^2_{0(12)} - R^2_{0(2)}) - (R^2_{0(123)} - R^2_{0(23)})\right]$$

and applying equation (23) yields

$$C(123) = (r^2_{01} - r^2_{0(1.3)}) - (r^2_{0(1.2)} - r^2_{0(1.23)})$$

Alternative forms are

$$C(123) = (r^2_{02} - r^2_{0(2.1)}) - (r^2_{0(2.3)} - r^2_{0(2.13)})$$

and

$$C(123) = (r^2_{03} - r^2_{0(3.2)} - (r^2_{0(3.1)} - r^2_{0(3.12)}).$$

If we have more variables the higher order commonalities can be expressed as higher order differences. For example, with four variables the commonality coefficients are

$$U(i) = r^2_{0(i.jkl)}$$

$$C(ij) = r^2_{0(i.kl)} - r^2_{0(i.jkl)}$$

$$= r^2_{0(i.kl)} - U(i)$$

$$C(ijk) = (r^2_{0(i.l)} - r^2_{0(i.jl)}) - (r^2_{0(i.kl)} - r^2_{0(i.jkl)})$$

$$= (r^2_{0(i.l)} - r^2_{0(i.jl)}) - C(ij)$$

$$C(ijkl) = \Big[(r^2_{0i} - r^2_{0(i.j)}) - (r^2_{0(i.k)} - r^2_{0(i.jk)})\Big]$$

$$- \Big[(r^2_{0(i.l)} - r^2_{0(i.jl)}) - (r^2_{0(i.kl)} - r^2_{0(i.jkl)})\Big]$$

$$= \Big[(r^2_{0i} - r^2_{0(i.j)}) - (r^2_{0(i.k)} - r^2_{0(i.jk)}) - C(ijk))\Big]$$

Using the foregoing general equations we can see how the part correlations afford a meaningful interpretation for at least the lower orders of commonality coefficients. A first order coefficient is the proportion of the variation in the dependent variable which is accounted for by variable i after the effects of j, k and l have been removed from i; that is, it is the unique contribution of variable i.

In the second order commonality coefficients we see the effect of controlling on the variable j. This coefficient gives the decrease or increase in proportion of variance accounted by i as a result of controlling on j. For example, if controlling on j reduces the strength of the relationship between the dependent variable and i the coefficient will be positive.[4] On the other hand if the variable j is masking a relationship between 0 and i, controlling on j strengthens the relationship and the second order coefficient will be negative.

In the third order coefficient we see the effects of controlling on j when compounded by the presence or absence of control on the variable k. More specifically we compare the change in variance associated with j[5] when the effect of k on i has not been removed to the corresponding second order commonality where the effect of k has been removed. If controlling k moderates the effect of j the third order coefficient will be positive; if the effect of j is enhanced the coefficient will be negative.

Though in principle the higher order coefficients can be explained in a similar way, the profusion of variables works against clear translation of the mathematical expressions.

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[4] By a reduction in strength we mean that the absolute value of the correlation decreases.

[5] We distinguish here between the variance in the dependent variable associated with i and the change in this variance associated with the imposition of control on j.

We turn now to a generalization of the foregoing results which greatly increases the applicability of commonality coefficients. It is that the equations presented can easily be extended to apply to groups of regressor variables. For example, let F represent the set of variables X_1, X_2, X_3 ; let G represent the set X_4, X_5 and let H represent X_6, X_7 and X_8.

Then:

$$R^2_{0(F)} = R^2_{0(123)}$$

$$R^2_{0(G)} = R^2_{0(45)}$$

$$R^2_{0(H)} = R^2_{0(678)}$$

$$R^2_{0(FG)} = R^2_{0(12345)}$$

and so on.

The commonality coefficient for two sets of variables, say F and G, is then:

$$C(FG) = R^2_{0(FGH)} - R^2_{0(H)} - U(F) - U(G)$$

by extension of equation (3); the other commonality coefficients follow directly. A unique contribution may now refer to the variation explained by a group of variables rather than a single one; a second-order commonality is the contribution of two sets of variables and so.

Though the mathematics of part correlations does not carry over directly to groups of variables, the prior developments do suggest an interpretation of this more general case. Thus, a second order commonality coefficient would indicate the increase or decrease in variance accounted for by the i group of variables as a consequence of controlling on the j group of variables and so on. It is by grouping variables and performing commonality analyses that one can begin to discern the structure in nonexperimental, multivariable data.

For the general case, with n variables, the notation which we have used thus far for expressing commonalities proves to be too cumbersome. In it's place we may use a more convenient, though somewhat more recondite, mode of expression for the reduced form. We give an example first and then write the general case. The second-order commonality coefficient of X_1 and X_2 may be written, in what is sometimes referred to as a symbolic form, as:

$$C(12) = R^2 \left[- (1-X_1)(1-X_2)\, X_3 \right] .$$

When properly interpreted the expression in brackets indicates how to write the reduced form for this commonality. First the product is multiplied out to yield

$$C(12) = R^2 \left[-X_3 + X_2X_3 + X_1X_3 - X_1X_2X_3 \right].$$

Now each term in the brackets has a one-to-one correspondence with a squared multiple correlation coefficient in the reduced form; the latter can then be written down by inspection as[6]

$$C(12) = -R^2_{0(3)} + R^2_{0(23)} + R^2_{0(13)} - R^2_{0(123)} .$$

Using the symbolic form we may now write the commonality coefficients which compose $R^2_{0(X_1)}$, for example, as

$$C(X_1) = R^2 \left[-(1 - X_1)\, X_2X_3 - - - X_n \right]$$

$$C(X_1X_2) = R^2 \left[-(1 - X_1)\,(1 - X_2)\, X_3X_4---X_n \right]$$

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[6] Cf. equation (16a).

$$C(X_1X_3) = R^2 [- (1 - X_1)(1 - X_3) X_2X_4---X_n]$$

$$\vdots$$

$$C(X_1X_2---X_{n-1}) = R^2[-(1 - X_1) (1 - X_2)---(1 - X_{n-1})X_n]$$

$$C(X_1X_2---X_n) = R^2[1 - (1 - X_1) (1 - X_2) ---(1 - X_n)]$$

APPENDIX III

Student Questionnaire Item Codes*

*Questionnaires are available upon request from the author.

The parentheses after the explanation of the manner of coding for each item indicates the grade level at which the item was asked and the number of the item in the questionnaire for that grade level. For example, (12:3; 9:4; 6:2) indicates that the question or item was used at grades twelve, nine and six and that it appears as questionnaire item three at the twelfth grade, item four at the ninth grade, item two at the sixth grade and was not asked for the other grade levels.

Title	Interpretation of Coding
Sex	Scored high for female, low for male (12:3; 9:3; 6:1; 3:1; 1:1).
Age	Scored high for the typical or modal age, for that grade level, lower for younger or older (e.g. at the ninth grade ages 13 and 14 are scored high; 12, 15-18 lower) (12:4; 9:4; 6:2; 3:2; 1:2).
Mother's Birthplace	Scored high for local and out of state residence, lower for out of country (6:13; 1:13).
Area in Which the Student Has Spent Most of His Life	Scored high for residence in another state, lower for local and out of country (12:5; 9:5; 6:3; 3:48; 1:3).
Type of Community in Which Student Has Spent Most of His Life	Scored high for large city suburbs and medium size cities, low for rural and inner cities (12:6; 9:6).
Racial-Ethnic Differences	Scored high for whites and Oriental-Americans, low for Negroes, Puerto-Ricans, Mexican-Americans and Indian Americans (12:7-8; 9:7-8; 6:4-6; 3:3-5; 1:4-6).
Number of Persons Living in the Home	Scored high for 3, 4 and 5 persons, lower for more or fewer (12:9; 9:9; 6:7; 3:6; 1:7)
Number of Siblings	Scored high for none through 4, lower for more (12:10; 9:10; 6:8; 3:7; 1:8).

Title	Interpretation of Coding
Number of Older Siblings	Scored high for 1 or 2, lower for more or fewer siblings (12:11; 9:11).
Number of Older Siblings Dropped Out of High School	Scored high for no older siblings or no dropouts and lower for increasingly larger numbers of dropouts (12:12; 9:12).
Parents Speak a Foreign Language in the Home	Scored high for English spoken most of the time (12:13; 9:13; 6:16; 3:12; 1:16).
Student Speaks a Foreign Language Outside of School	Scored high for rarely, intermediate for occasionally or not at all, and low for frequently (12:14; 9:14; 6:17; 3:13; 1:17).
Number of Rooms in the Home	Scored highest for 5 to 10 rooms, lower for fewer rooms (12:15; 9:15; 3:14)
Who Acts as Father	Scored high for father living at home, lower for some other person serving as father (12:16; 9:16; 6:9; 3:8; 1:9).
Who Acts as Mother	Scored high for mother living at home, lower for some other person serving as mother (12:17, 9:17; 6:10; 3:9; 1:10).
Father's Occupational Level	Scored high for professional, sales, managerial and technical occupations, low for farm worker, laborer (12:18; 9:18; 6:12; 3:51; 1:12).
Father's Educational Level	Scored higher for increasingly more years of education (12:19; 9:19; 6:11; 3:49; 1:11).
Mother's Educational Level	Scored higher for increasingly more years of education (12:20; 9:20; 6:14; 3:50; 1:14).
Family's Source of Income	Scored high for father's work major source, low for mother or other relative (12:22; 9:22).
Mother's Work	Scored high if mother doesn't work, low if she is employed full-time (12:23; 9:23).

Title	Interpretation of Coding
Gets Along Well With Classmates	Scored high for yes, low for no (1:32).
Avoids Disturbing Classmates	Scored high for yes, low for no (1:33).
Arrives School on Time	Scored high for yes, low for no (1:34)
Shows Desire to Learn	Scored high for yes, low for no (1:35).
Shows Good Speaking Vocabulary	Scored high for yes, low for no (1:36).
Pays Attention in Class	Scored high for yes, low for no (1:37).
Moves From Activity to Activity Progressively	Scored high for yes, low for no (1:38).
Assumes Responsibility	Scored high for yes, low for no (1:39).
Attended Project Headstart	Scored high if he did not attend, low if he did (1:29).
Grade Last Year	Scored high if he is not repeating last years grade, low if he is (6:47; 3:36; 1:30).
Liked By Classmates	Scored high if child feels he is liked by his classmates, low if he feels he is disliked (6:39; 3:28).
Good Student	Scored high if child feels he is one of the better students in his class, scored low if he feels he is one of the poorer students (6:40; 3:29).
Likes School	Scored high if child likes school, low for dislike (6:36).
Non-Verbal Test Score	Total Correct (administered at all grade levels).
General Information, Total	Total Correct (administered at grades 12 and 9).

Title	Interpretation of Coding
Education in Job	Scored high if student disagrees with statement that he'll have a hard time getting the right kind of job even with a good education, lower for agree (12:105; 9:96).
Sacrifice	Scored high if student would not make any sacrifice to get ahead, scored low if he would (12:106; 9:97)
Want to Change	Scored high if student would not want to be someone else, low if he would (12:107; 9:98; 6:33).
Learning Problem	Scored high if the student feels that he can learn all right, low if he doesn't feel that (12:108; 9:99; 6:37).
Teaching Rate	Scored high if student disagrees that he would learn better if the teachers didn't go so fast, low if he agrees with it (12:109; 9:100).
Successful Life	Scored high if student disagrees that people like him don't have a chance to be successful in life, lower if agree (12:110; 9:103; 6:38).
Tough Job	Scored high if student agrees that the tougher the job the harder he works (12:111; 9:101).
Ability to Do Well	Scored high if the student says he is able to do many things well, lower if not (12:112; 9:102; 6:34).
Occupational Level Preferred	Scored high for professional and technical aspirants, low for farm workers (12:115; 9:106; 6:53).

Title	Interpretation of Coding
Extra-Curricular Activities	Scored high for participation in many extracurricular activities such as future teachers, athletic team, student council, debate, etc., low for non-participation (12:69, 70, 71, 72, 73; 9:65, 67, 68, 69, 70).
Outside Work	Scored high if the student worked 20 hours a week or less, low if more than 20 hours/week (12:89; 9:86)
Social Rating	Scored high if the student feels he has a high social rating, low if he thinks he has a lower social rating (12:90; 9:87).
Brightness	Scored high if the student feels that he is one of the brightest in his grade, lower if he feels he is one of the less bright (12:91; 9:88).
Teacher's Expectations for Student to Excel	Scored high if the student feels that his teacher expects him to be above average, low if he feels that his teacher expects him to be below average (12:100; 9:91)
Life Condition	Scored high if the student disagrees that people who accept life are happier than those who try to change, intermediate if they aren't sure (12:101; 9:92).
Work Success	Scored high if student disagrees that good luck is more important than hard work for success, lower if he agrees (12:102; 9:93).
Getting Ahead	Scored high if student disagrees that everytime he tries to get ahead something or someone stops him, lower if he agrees (12:103; 9:94)
Success in Life	Scored high if student disagrees that if a person is not successful in life it is his own fault, lower for agree (12:104; 9:95).

Title	Interpretation of Coding
Kindergarten Attendance	Scored high for attendance, low for non-attendance (12:45; 9:44; 6:45; 3:34; 1:27).
Attended Nursery School	Scored high for attendance at nursery school before kindergarten, low for non-attendance (6:46; 3:35; 1:28).
Frequency of Changes in School	Scored high for few or no changes, lower for two or more (12:47; 9:46; 6:30; 3:26).
Recency of Change in School	Scored high for no change or a change of three or more years ago, low for a more recent change (12:48; 9:47).
Desire for Higher Education	Scored higher for increasingly more years of education desired (12:49; 9:48; 6:51).
College Plans	Scored high for definite college plans, low for non-college plans (12:56; 9:53).
Number of Books Read During Summer	Scored high for many books, low for few or none (12:57; 9:54; 6:28; 3:24).
Hours Watching TV	Scored high for 1 to 3 hours of TV viewed per day, lower for more or less (12:58; 9:55; 6:29; 3:25).
Attitude Towards School	Scored high if student would do most anything to continue in school, low if he'd like to quit (12:59; 9:56).
Students Own Desire to Excel	Scored high if student wants to be one of best in class or above middle, low for lower aspirations (12:60; 9:57).
Study Time	Scored high if student spends a moderate amount of time per day studying outside of school (1 to 3 hours for 9 and 12, $\frac{1}{2}$ to $1\frac{1}{2}$ hours for 6) (12:61; 9:58; 6:32).
Voluntary Absences	Scored high if student has not stayed away from school just because he wanted to, lower as number of days absent increases(12:63; 9:60).

Title	Interpretation of Coding
Mother's Desire for Child's Academic Excellence	Scored high if mother wants him to be one of best students in class or above average, low for just good enough to get by (12:24; 9:24; 6:41; 3:30).
Father's Desire for Child's Academic Excellence	Scored high if father wants him to be one of best students in class or above average, low for just good enough to get by (12:25; 9:25; 6:42; 3:31).
School Discussions With Parents	Scored high if discussions are held daily or weekly, low if discussions aren't held at all (12:26; 9:26; 6:54).
Father's Desire for Child's Educational Level	Scored high if father wants child to have four or more years of college, low for finishing high school or less (12:27; 9:27).
Mother's Desire for Child's Educational Level	Scored high if mother wants child to have four or more years of college, low for finishing high school or less (12:28; 9:28).
Frequency of Parents PTA Attendance	Scored high for frequent attendance at meetings and lower for less frequent attendance. Also scored high if the school does not have a PTA (12:29; 9:29).
Pre-School Reading	Scored high if the student was read to frequently before he started school, lower for not at all or infrequently (12:30; 9:30; 6:18; 3:18).
Appliances in the Home	A special measure scored high for possession of a TV set, telephone, hi fi, stereo, refrigerator, automobile, vacuum cleaner, etc., low for non-possession (12:31, 32, 33, 34, 37; 9:31, 32, 33, 34, 37; 6:19, 20, 21, 22, 25, 26; 3:15, 16, 17, 18, 21, 22; 1:18, 19, 20, 21, 24, 25).
Reading Materials in the Home	A special measure scored high for subscription to a daily newspaper, magazines, possession of an encyclopedia,, number of books in the home, etc., low for non-possession (12:35, 36, 39, 41, 42; 9:35, 36, 39, 41, 42; 6:23, 24, 27; 3:19, 20, 23; 1:22, 23, 26).

Title	Interpretation of Coding
Verbal Ability	Total Correct (administered at all grade levels).
Reading Comprehension	Total Correct (administered at grades 12, 9, 6, and 3).
Mathematics Achievement	Total Correct (administered at grades 12, 9, 6, and 3).

QUESTIONNAIRE ITEM ALTERNATIVES

GRADE LEVEL	QUESTIONNAIRE NUMBER	A	B	C	D	E	F	G	H	I	J	K	NON-RESPONSE CODE
Q: Sex													
12	3	50.604	49.451										43.891
9	1	49.760	50.527										38.511
6	1	49.414	50.731										43.336
3	1	49.472	50.685										45.236
1	1	49.399	50.557										50.788
Q: Age													
12	4	43.479	45.503	50.854	51.379	44.112	40.753	42.547					42.797
9	4	46.108	50.731	52.185	44.064	41.246	39.318	41.331					38.732
6	2	38.108	51.486	52.031	44.367	39.904							43.205
3	2	49.093	51.322	45.972	43.591	40.397							46.228
1	2	47.396	50.301	49.530	48.510	49.376							50.505
Q: Mother's Birthplace													
6	13	50.974	52.205	40.419	42.654	47.313	46.986	45.336					41.296
1	13	50.040	50.358	43.456	46.953	53.306	50.817	49.862					49.976
Q: Type of Community													
12	6	48.399	50.068	50.546	50.871	49.488	53.639	49.547	54.035				42.672
9	6	47.753	50.135	51.633	51.422	49.565	54.101	49.108	52.640				40.879
Q: Racial-Ethnic Differences													
12	7-8	39.612	52.111	42.892	40.906	46.563	49.811	46.187					44.404
9	7-8	41.609	52.788	43.599	40.643	44.839	51.024	45.707					39.976
6	4-6	42.513	53.181	42.244	38.560	44.194	49.391	45.605					43.144
3	3-5	43.157	52.172	44.658	39.651	45.463	48.561	48.200					46.096
1	4-6	42.309	52.212	44.976	44.656	47.233	52.775	47.176					49.946

		QUESTIONNAIRE ITEM ALTERNATIVES												
GRADE LEVEL	QUESTIONNAIRE NUMBER	A	B	C	D	E	F	G	H	I	J	K	NON-RESPONSE CODE	L
Q: Number of Persons In The Home														
12	9	49.256	50.996	51.286	50 966	49.994	49.326	47.118	45.964	44.796	43.257		43.769	
9	9	48.055	51.253	52.399	51.783	50.543	48.763	47.423	45.542	44.330	43.223		39.064	
6	7	44.769	51.054	52.795	52.437	51.028	49.417	47.476	46.248	43.901	44.548		42.864	
3	6	44.544	51.979	52.765	52.014	50.493	48.490	47.643	45.916	45.108	46.017		43.922	
1	7	47.443	50.824	52.092	51.453	50.444	48.389	47.218	45.978	45.320	44.920	44.276	48.248	42.898
Q: Number of Siblings														
12	10	51.002	52.394	51.908	50.912	49.580	48.310	46.529	45.277	44.091	42.414		43.269	
9	10	50.337	53.361	52.604	51.431	49.723	48.182	46.628	45.497	44.155	43.400		39.633	
6	8	49.268	52.319	52.102	50.933	49.105	47.721	45.868	44.317	42.516	41.454		41.378	
3	7	49.117	52.829	52.628	51.400	49.121	47.493	46.134	45.254	43.988	43.445		43.015	
1	8	50.691	52.194	51.437	50.424	48.048	46.518	45.482	45.820	43.620	43.640		47.939	
Q: Number of Older Siblings														
12	11	51.686	50.827	49.513	47.801	45.694	44.702	43.126	43.196	42.506	42.483		43.379	
9	11	52.221	51.360	49.800	47.951	46.415	45.519	44.652	43.287	43.066	42.337		39.681	
Q: Number of Older Siblings Dropout														
12	12	52.067	50.369	46.173	43.971	43.167	41.791	41.972	42.575	41.610	42.877		45.499	
9	12	52.822	50.760	45.920	43.700	43.024	41.906	41.927	41.150	39.794	42.579		41.756	
Q: Parents Speak a Foreign Language														
12	13	46.835	50.514										42.642	
9	13	47.076	50.723										39.911	
6	16	47.425	50.838										39.307	
3	12	47.578	50.575										44.474	
1	16	47.014	50.158	50.700									49.615	
Q: Student Speaks A Foreign Language														
12	14	46.150	50.407	52.669	49.687								43.275	
9	14	45.557	50.500	52.663	49.934								39.613	
6	17	46.554	50.820										44.458	
3	13	47.337	50.458										44.216	
1	17	45.709	50.200	50.557									49.564	

QUESTIONNAIRE ITEM ALTERNATIVES

GRADE LEVEL	QUESTIONNAIRE NUMBER	A	B	C	D	E	F	G	H	I	J	K	NON-RESPONSE CODE
Q: Number of Rooms in Home													
12	15	45.209	41.551	43.561	46.337	48.775	49.904	51.552	52.176	52.670	52.385		44.687
9	15	44.523	40.491	42.627	46.089	49.109	50.732	51.830	52.451	52.915	52.065		40.919
3	14	40.240	42.119	44.950	47.685	50.203	51.494	52.553	52.916	52.849	52.475		42.759
Q: Who Acts as Father													
12	16	50.869	46.725	47.653	45.684	42.897	44.960	45.799	46.886				43.315
9	16	51.329	46.631	47.142	41.438	42.770	45.075	44.688	45.652				41.598
6	9	51.350	45.906	47.429	43.531	43.039	43.579	43.590	45.464				43.746
3	8	50.966	46.486	47.898	44.403	44.683	46.882	44.906	46.447				42.881
1	9	50.562	48.202	48.296	47.318	47.005	44.744	43.072	45.208				49.118
Q: Who Acts as Mother													
12	17	50.411	47.107	48.450	45.941	42.621	44.185	43.990	46.473				44.257
9	17	50.739	44.946	46.792	41.880	43.215	43.744	43.746	43.186				41.285
6	10	50.876	42.313	45.666	43.676	42.222	42.972	40.436	41.190				42.754
3	9	50.488	42.988	47.622	45.164	46.228	45.410	47.475	42.388				42.557
1	10	50.148	48.710	48.941	47.148	45.795	44.368	47.685	46.338				49.525
Q: Fathers Occupational Level													
12	18	52.379	52.653	52.771	49.510	53.558	50.707	42.478	47.221	56.012	50.607	41.850	42.338
9	18	52.674	52.299	53.451	50.060	53.877	50.397	43.316	48.657	56.597	51.000	43.057	42.599
6	12	48.723	52.766	53.570	49.995	54.101	50.166	45.532	49.572	55.299	51.438	44.086	45.002
3	51	54.368	54.481	54.586	50.061	53.917	52.897	45.684	45.923	56.833	50.764	45.693	48.787
1	12	52.254	53.613	53.665	50.025	53.849	53.573	46.430	46.487	55.466	51.422	45.506	49.031

GRADE LEVEL	QUESTIONNAIRE NUMBER	A	B	C	D	E	F	G	H	I	J	K	NON-RESPONSE CODE
Q: Father's Educational Level													
12	19	45.197	48.161	48.962	51.745	53.351	54.323	55.122	57.401	43.883			43.090
9	19	44.569	48.267	49.109	51.845	54.281	54.662	55.840	57.925	45.414			42.166
6	11	43.934	46.415	49.364	52.396	50.457	54.099	55.127	55.951	48.726			44.624
3	49	43.210	47.279	48.178	52.060	54.201	54.780	56.189	58.188	48.275			48.633
1	11	43.765	47.336	49.042	52.730	52.435	54.557	55.783	55.904	48.778			49.350
Q: Mother's Educational Level													
12	20	44.453	46.936	47.601	51.550	54.796	54.526	55.436	55.258	43.895			43.939
9	20	43.460	46.732	48.030	52.054	55.302	55.235	55.685	55.533	44.875			41.984
6	14	43.339	45.172	48.513	52.832	52.283	53.708	54.167	52.457	48.487			44.367
3	50	42.617	46.413	47.740	52.179	55.752	54.793	56.524	55.809	48.555			48.867
1	14	43.098	46.140	48.235	52.840	53.229	55.083	55.362	54.755	49.131			49.781
Q: Mother's Work													
12	23	49.521	49.960	50.452									43.676
9	23	49.316	49.899	50.738									40.970
Q: Family's Source of Income													
12	22	50.966	47.312	48.351	44.383	45.430	44.151						46.310
9	22	51.387	47.341	48.065	40.797	44.904	43.146						44.391
Q: Mother's Desire for Child's Excellence													
12	24	51.719	50.818	44.783	41.246	46.415							46.740
9	24	51.520	51.541	46.708	40.265	46.202							41.838
6	41	50.983	51.237	47.454	44.239	47.793							40.453
3	30	50.529	50.842	46.840	48.292	47.377							43.492

QUESTIONNAIRE ITEM ALTERNATIVES

GRADE LEVEL	QUESTIONNAIRE NUMBER	A	B	C	D	E	F	G	H	I	J	K	NON-RESPONSE CODE
Q:	Father's Desire for Child's Excellence												
12	25	51.678	50.981	45.064	42.805	46.820							46.293
9	25	51.577	51.511	46.815	40.933	46.659							43.289
6	42	51.122	50.985	47.039	44.325	48.198							41.604
3	31	50.672	50.192	46.496	48.060	48.632							44.350
Q:	School Discussion with Parents												
12	26	50.453	50.342	48.953	49.027								45.027
9	26	50.896	49.926	48.775	47.935								42.728
6	54	51.104	49.667	51.540	46.637								42.161
Q:	Father's Desire for Child's Educational Level												
12	27	45.422	45.102	47.279	47.163	53.141	55.690	47.385	47.747				45.193
9	27	42.570	44.251	48.193	47.017	53.014	55.592	47.354	48.149				42.514
Q:	Mother's Desire for Child's Educational Level												
12	28	44.670	44.975	47.135	47.061	52.754	54.999	47.826	47.762				44.456
9	28	41.178	44.095	48.189	47.073	52.682	55.075	45.337	48.023				40.953
Q:	Frequency of Parent's PTA Attendance.												
12	29	49.822	50.029	49.722	51.279	53.561	47.518						44.288
9	29	49.451	50.616	50.746	51.770	53.432	47.742						41.739
Q:	Pre-School Reading												
12	30	46.727	48.814	51.482	51.441	48.266							43.874
9	30	45.153	48.671	52.370	51.916	47.664							39.846
6	18	44.388	50.133	53.587	51.729	47.868							39.996
3	18	50.278	43.497										42.498

QUESTIONNAIRE ITEM ALTERNATIVES

GRADE LEVEL	QUESTIONNAIRE NUMBER	A	B	C	D	E	F	G	H	I	J	K	NON-RESPONSE CODE
Appliances in the Home (Sum of the Code Values for Each Student at Each Grade Level on the Following Items)													
12	31	50.176	45.156										43.195
12	32	50.909	43.205										42.900
12	33	50.394	47.259										43.280
12	34	50.170	39.478										43.464
12	37	50.578	42.464										42.834
9	31	50.395	43.532										38.347
9	32	51.393	43.412										38.061
9	33	50.696	45.905										37.850
9	34	50.427	38.781										38.081
9	37	50.922	42.936										38.220
6	19	50.649	42.623										37.738
6	20	51.607	44.069										37.097
6	21	51.085	45.525										36.930
6	22	50.857	38.267										36.732
6	25	51.203	42.304										36.055
6	26	52.027	43.719										36.451
3	15	50.413	44.461										42.096
3	16	51.395	45.232										42.461
3	17	50.767	47.449										43.535
3	18	50.278	43.497										42.498
3	21	51.635	44.650										44.589
3	22	51.591	45.248										44.424
1	18	50.337	44.126										38.942
1	19	51.657	44.534										48.884
1	20	51.128	47.226										49.065
1	21	50.221	42.323										48.690
1	24	50.894	42.889										48.550
1	25	52.259	44.577										48.604

QUESTIONNAIRE ITEM ALTERNATIVES

Q: Reading Materials in the Home (Sum of the Code Values for Each Student At Each Grade Level on the Following Items)

GRADE LEVEL	QUESTIONNAIRE NUMBER	A	B	C	D	E	F	G	H	I	J	K	NON-RESPONSE CODE
12	35	50.253	41.720										43.652
12	36	51.008	46.073										41.586
12	39	50.762	45.752										44.439
12	41	45.881	48.479	50.946	53.614	52.664							42.499
12	42	44.500	45.905	49.727	52.585	54.432							42.771
9	35	50.609	40.827										38.073
9	36	51.506	44.988										37.710
9	39	51.106	45.440										40.132
9	41	46.153	49.887	51.824	53.228	49.019							39.161
9	42	43.441	45.720	49.904	52.915	53.997							40.637
6	23	51.174	42.941	39.660									36.498
6	24	52.207	46.201	40.682									36.935
6	27	51.522	46.286										39.209
3	19	51.276	45.558	48.562									42.925
3	20	51.851	46.817	49.027									44.264
3	23	51.098	48.201										44.177
1	22	52.318	46.678	48.722									49.175
1	23	53.243	47.690	49.178									49.329
1	26	51.189	47.374										48.914

GRADE LEVEL	QUESTIONNAIRE NUMBER	A	B	C	D	E	F	G	H	I	J	K	NON-RESPONSE CODE
Q: Kindergarten Attendance													
12	45	51.664	48.086										41.703
9	44	51.694	48.127										37.364
6	45	51.670	48.349										38.124
3	34	51.341	48.228										45.206
1	27	51.748	47.034										49.077
Q: Nursery School Attendance													
6	46	51.327	50.848	46.925									38.340
3	35	50.748	50.379	49.336									48.617
1	28	52.509	49.768	49.918									49.272
Q: Frequency of Change in School													
12	47	50.292	50.229	49.302	49.139	50.457							40.884
9	46	50.984	50.670	49.091	48.868	49.616							37.675
6	30	50.625	50.328	50.395	49.755	48.343							37.817
3	26	51.014	49.500	48.598	48.074	45.824							42.776
Q: Recency of Change in School													
12	48	50.097	49.003	49.421	49.770	49.520	49.337	50.753					41.127
9	47	50.793	48.704	48.834	49.202	49.601	51.044	51.091					37.836
Q: Desire for Higher Education													
12	49	41.951	44.859	47.074	48.354	53.326	55.973						43.741
9	48	42.040	44.127	48.605	48.643	52.830	55.153						39.857
6	51	38.478	39.769	40.908	46.896	52.172							39.139
Q: College Plans													
12	56	54.563	48.564	46.553	46.520								41.576
9	53	43.316	49.376	46.494	44.470								38.943

GRADE LEVEL	QUESTIONNAIRE NUMBER	QUESTIONNAIRE ITEM ALTERNATIVES A	B	C	D	E	F	G	H	I	J	K	NON-RESPONSE CODE
Q: **Number of Books Read During Summer**													
12	57	47.952	50.358	51.323	51.323	51.523	52.890						41.231
9	54	47.434	50.465	51.046	51.588	51.672	52.440						39.464
6	28	47.101	49.426	51.191	51.712	52.098							38.559
3	24	45.773	48.478	50.660	51.365								43.766
Q: **Hours Watching TV**													
12	58	50.670	52.001	51.808	51.485	49.790	48.803	45.839					41.771
9	55	48.262	49.291	52.058	52.968	51.927	51.348	47.280					39.479
6	29	47.087	45.796	50.776	52.950	52.505	52.234	49.051					41.886
3	25	47.709	48.385	49.189	50.270	51.914	51.657	50.912					42.658
Q: **Attitude Towards School**													
12	59	44.013	47.252	46.851	49.602	51.919							41.587
9	56	43.316	45.974	47.180	50.704	52.532							40.345
Q: **Student's Desire to Excel**													
12	60	52.285	50.569	45.184	43.320	46.112							41.925
9	57	52.054	50.862	46.459	41.923	43.736							39.871
Q: **Study Time**													
12	61	48.822	49.731	50.117	50.512	50.127	50.942	49.564					40.691
9	58	46.306	48.826	50.771	51.664	51.224	50.986	47.187					38.981
6	32	48.676	50.211	51.478	51.524	47.799							41.268
Q: **Voluntary Absences**													
12	63	50.252	50.308	50.062	48.198	46.447							41.998
9	60	50.835	49.400	45.758	44.192	38.956							38.956

QUESTIONNAIRE ITEM ALTERNATIVES

GRADE LEVEL	QUESTIONNAIRE NUMBER	A	B	C	D	E	F	G	H	I	J	K	NON-RESPONSE CODE
Extra-Curricular Activities (Sum of the Code Values for Each Student At Each Grade Level on the Following Items)													
12	69	1	0	0									0
12	70	1	0	0									0
12	71	1	0	0									0
12	72	0	1	1	0								0
12	73	0	1	1	0								0
9	65	1	0	0									0
9	67	1	0	0									0
9	68	1	0	0									0
9	69	0	1	1	0								0
9	70	0	1	1	0								0
Q: Outside Work													
12	89	50.796	50.289	49.519	50.720	51.271	48.960						40.285
9	86	51.152	50.110	49.465	50.152	50.007	49.284						39.910
Q: Social Rating													
12	90	51.405	51.251	49.153	47.034								44.461
9	87	50.788	51.589	50.227	45.683								43.153
Q: Brightness													
12	91	56.924	53.821	46.704	42.811	42.144							41.362
9	88	55.228	53.790	48.410	42.830	40.151							41.215
Q: Teacher's Expectations for Students to Excel													
12	100	53.546	51.446	46.086	42.736	48.900							44.933
9	91	51.372	51.719	48.080	41.972	50.901							40.517

		QUESTIONNAIRE ITEM ALTERNATIVES											
[illegible] [illegible]	QUESTIONNAIRE NUMBER	A	B	C	D	E	F	G	H	I	J	K	[illegible] CODE
Q:	**Life Condition**												
12	101	47.293	49.306	54.050									40.425
9	92	50.358	47.750	54.524									39.870
Q:	**Work Success**												
12	102	41.557	44.250	51.620									39.882
9	93	41.718	43.590	53.107									39.605
Q:	**Getting Ahead**												
12	103	45.443	48.238	52.671									40.659
9	94	46.333	49.507	53.389									40.155
Q:	**Success in Life**												
12	104	49.838	51.039	50.853									40.283
9	95	49.617	50.855	51.910									39.958
Q:	**Education in Job**												
12	105	47.792	49.745	52.438									40.437
9	96	47.428	50.021	52.779									40.401
Q:	**Sacrifice**												
12	106	45.753	50.618	53.535									40.741
9	97	47.620	51.243	53.147									40.488
Q:	**Want to Change**												
12	107	48.003	50.194	51.389									40.893
9	98	47.684	49.695	52.617									40.492
6	33	47.432	52.097	49.431									40.080
Q:	**Learning Problem**												
12	108	48.715	48.858	52.824									40.812
9	99	49.262	48.605	53.254									40.746
6	37	48.759	51.876										40.904

QUESTIONNAIRE ITEM ALTERNATIVES

GRADE LEVEL	QUESTIONNAIRE NUMBER	A	B	C	D	E	F	G	H	I	J	K	[illegible]
Q:	Teaching Rate												
12	109	46.651	49.247	53.285									40.737
9	100	47.443	49.507	53.628									40.610
Q:	Successful Life												
12	110	43.743	46.201	51.965									40.993
9	103	43.994	47.091	53.046									41.092
6	38	43.709	47.457	53.897									41.037
Q:	Tough Job												
12	111	50.471	51.165	49.774									41.039
9	101	51.289	50.188	49.058									40.939
Q:	Ability To Do Well--												
12	112	50.773	50.364	50.001									41.275
9	102	51.457	49.988	48.766									41.115
6	34	51.438	45.975	49.122									40.188
Q:	Occupational Level Preferred												
12	115	51.520	47.161	47.732	47.461	46.433	47.715	43.909	44.178	55.227	48.322	47.849	40.825
9	106	51.639	45.992	46.913	49.062	44.693	47.817	43.509	45.023	55.175	49.397	47.987	40.878
6	(Boys) 53	11	5	6	9	3	7	2	4	12	10	8	1
6	(Girls) 53	6	12	8	9	3	11	10	7	2	4	5	1
Q:	Gets Along With Classmates												
1	32	50.283	45.175										50.211
Q:	Avoids Disturb. Classmates												
1	33	50.789	46.259										49.907
Q:	Arrives School On Time												
1	34	50.219	42.757										50.030

	GRADE LEVEL	QUESTIONNAIRE NUMBER	A	B	C	D	E	F	G	H	I	J	K	NON-RESPONSE CODE
			QUESTIONNAIRE ITEM ALTERNATIVES											
Q:	Shows Desire to Learn													
	1	35	51.020	42.045										49.997
Q:	Shows Good Speaking Vocabulary													
	1	36	51.627	42.061										50.004
Q:	Pays Attention In Class													
	1	37	51.435	43.919										49.914
Q:	Moves From Activity to Activity													
	1	38	51.636	42.974										50.116
Q:	Assumes Responsibility													
	1	39	51.043	43.334										49.976
Q:	Attended Headstart													
	1	29	44.437	49.194	50.732									49.650
Q:	Grade Last Year													
	6	47	41.598	50.954	40.867									37.655
	3	36	39.141	50.640	45.588									41.550
	1	30	49.888	50.010										50.055
Q:	Liked By Classmates													
	6	39	50.798	50.315	46.805									39.324
	3	28	50.550	47.950										44.973
Q:	Good Student													
	6	40	54.099	52.257	49.155	43.926	41.676							43.242
	3	29	50.589	51.705	50.068	47.037	44.370							43.774
Q:	Likes School													
	6	36	50.787	48.438										41.098

APPENDIX IV

Means, Standard Deviations and Intercorrelations for the Student Questionnaires at the Different Grade Levels and Varimax Factors for the Ninth and Twelfth Grades*

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*These computations are based upon an approximate ten percent random sample taken from the full sample at each grade level. The reader will note that the means of the criterion scaled variables are slightly greater than 50 for grades 12, 9, 6 and 3. This is because individuals who had smudged an answer to a question or gave more than one answer were included as non-respondents in the criterion scale analysis when the mean of 50 was assigned but their smudged or double responses were eliminated from that particular variable in these computations. Since these people were assigned a low score in the criterion scale analysis, eliminating them would tend to raise the means slightly. This problem does not arise at the first grade where the teachers filled out the answer sheet.

Means, Standard Deviations, Intercorrelations and Varimax Factors for Items From the Twelfth Grade Student Questionnaire

The variable numbers and titles for the twelfth grade student variables on the following pages are:

1 Sex (Q 3)

2 Age (Q 4)

3 Area in Which the Student Has Spent Most of His Life (Q 5)

4 Type of Community in Which Student Has Spent Most of His Life (Q 6)

5 Racial-Ethnic Differences (or Group Membership) (Q 7+)

6 Number of Persons Living in Home (Q 9)

7 Number of Siblings (Q 10)

8 Number of Older Siblings (Q 11)

9 Number of Siblings Dropped Out of High School (Q 12)

10 Parents Speak a Foreign Language in the Home (Q 13)

11 Student Speaks a Foreign Language Outside of School (Q 14)

12 Number of Rooms in the Home (Q 15)

13 Who Acts as Father (Q 16)

14 Who Acts as Mother (Q 17)

15 Father's Occupational Level (Q 18)

16 Father's Educational Level (Q 19)

17 Mother's Educational Level (Q 20)

18 Family's Source of Income (Q 22)

19 Mother's Work (Q 23)

20 Mother's Desire for Child's Academic Excellence (Q 24)

21 Father's Desire for Child's Academic Excellence (Q 25)

22 School Discussion With Parents (Q 26)

23 Father's Desire for Child's Educational Level (Q 27)

24 Mother's Desire for Child's Educational Level (Q 28)

25 Frequency of Parents PTA Attendance (Q 29)

26 Pre-School Reading (Q 30)

27 Appliances in the Home (Q's 31-34, 37, 38)

28 Reading Materials in the Home (Q's 35, 36, 39, 41, 42)

29 Kindergarten Attendance (Q 45)

30 Frequency of Changes in School (Q 47)

31 Recency of Change in School (Q 48)

32 Desire for Higher Education (Q 49)

33 College Plans (Q 56)

34 Number of Books Read During Summer (Q 57)

35 Hours Watching TV (Q 58)

36 Attitude Towards School (Q 59)

37 Students Own Desire to Excel (Q 60)

38 Study Time (Q 61)

39 Voluntary Absences (Q 62)

40 Extra-Curricular Activities (Q's 69-73)

41 Outside Work (Q 89)

42 Social Rating (Q 90)

43 Brightness (Q 91)

44 Teacher's Expectations (Q 100)

45 Life Condition (Q 101)

46 Work Success (Q 102)

47	Getting Ahead (Q 103)
48	Success in Life (Q 104)
49	Education in Job (Q 105)
50	Sacrifice (Q 106)
51	Want to Change (Q 107)
52	Learning Problem (Q 108)
53	Teaching Rate (Q 109)
54	Successful Life (Q 110)
55	Tough Job (Q 111)
56	Ability to Do Well (Q 112)
57	Occupational Level Preferred (Q 106)
58	Non-Verbal Test Score
59	General Information, Total
60	Verbal Ability
61	Reading Comprehension
62	Mathematics Achievement

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EMP-FACTOR ANALYSIS 12TH GRADE

ALL VARIABLES

THE NUMBER OF OBSERVATIONS IS      10048.

VARIABLE        SUMS         SUMS OF SQUARES          MEAN            SIGMA(N)          SIGMA(N-1)
    1       502765.8633     25160959.0000           50.0364           0.6587            0.6587
    2       502931.7383     25253427.2500           50.0529           2.8256            2.8258
    3       503014.3516     25188356.7500           50.0611           0.8277            0.8278
    4       503050.2500     25207999.2500           50.0647           1.5107            1.5108
    5       503167.5000     25394411.2500           50.0764           4.4346            4.4348
    6       502931.5508     25209916.0000           50.0529           1.9120            1.9121
    7       502801.9258     25239482.2500           50.0400           2.8088            2.8090
    8       503066.9688     25241363.2500           50.0664           2.3316            2.3317
    9       502727.8750     25221468.2500           50.0326           2.6142            2.6144
   10       503008.3594     25196145.7500           50.0605           1.2329            1.2330
   11       502878.0938     25186177.0000           50.0476           1.3512            1.3513
   12       502881.4492     25213565.0000           50.0479           2.1256            2.1257
   13       503208.5742     25230448.5000           50.0805           1.7142            1.7143
   14       502999.4531     25197525.0000           50.0597           1.3214            1.3214
   15       505018.1445     25488899.2500           50.2606           3.2541            3.2543
   16       503431.8203     25346073.7500           50.1027           3.4957            3.4959
   17       502668.4375     25263626.5000           50.0267           3.4091            3.4092
   18       503349.5000     25249252.5000           50.0945           1.8453            1.8453
   19       503060.8711     25188846.0000           50.0658           0.5199            0.5199
   20       502755.1445     25226590.7500           50.0353           2.6594            2.6595
   21       503408.2148     25283190.0000           50.1003           2.4894            2.4895
   22       503217.7617     25206941.7500           50.0814           0.7124            0.7124
   23       503623.7734     25368574.5000           50.1218           3.5418            3.5420
   24       503078.5078     25303909.2500           50.0675           3.3979            3.3981
   25       503210.7188     25215395.0000           50.0807           1.1912            1.1913
   26       503016.2148     25210186.7500           50.0613           1.6850            1.6851
   27      2995340.7813     0.89841702E 09         298.1032          23.3884           23.3895
   28      2493390.2500     0.62292386E 09         248.1479          20.4309           20.4320
   29       503183.7539     25230935.7500           50.0780           1.7985            1.7985
   30       503162.5273     25199412.5000           50.0759           0.5556            0.5557
   31       503408.7578     25224552.5000           50.1004           0.5965            0.5966
   32       503298.2930     25379601.7500           50.0894           4.1095            4.1097
   33       503420.0195     25349267.0000           50.1015           3.5574            3.5576
   34       503623.7422     25263932.7500           50.1218           1.4597            1.4598
   35       503849.2813     25298911.0000           50.1442           1.8334            1.8335
   36       503539.9141     25273716.0000           50.1134           1.9851            1.9852
   37       503619.8906     25317479.5000           50.1214           2.7383            2.7384
   38       503628.5781     25246235.2500           50.1223           0.5668            0.5668
   39       503570.4297     25242574.2500           50.1165           0.7328            0.7328
   40        11193.9998        22499.9993            1.1141           0.9991            0.9991
   41       505685.3750     25455827.5000           50.3270           0.7865            0.7866
   42       505442.5781     25440026.5000           50.3028           1.2156            1.2157
   43       506169.3984     25686206.7500           50.3751           4.3238            4.3241
   44       506780.1719     25640513.5000           50.4359           2.8320            2.8321
   45       507095.0586     25684709.7500           50.4673           3.0425            3.0426
   46       507566.2227     25724539.7500           50.5142           2.9130            2.9131
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EMP-FACTOR ANALYSIS 12TH GRADE

ALL VARIABLES

THE NUMBER OF OBSERVATIONS IS      10048.

VARIABLE       SUMS         SUMS OF SQUARES          MEAN             SIGMA(N)          SIGMA(N-1)
    47     507661.9336     25732685.2500           50.5237             2.8868              2.8870
    48     507660.5680     25652591.2500           50.5236             0.6126              0.6126
    49     507698.4609     25689604.0000           50.5273             1.9180              1.9181
    50     507823.8633     25756290.7500           50.5398             3.0090              3.0092
    51     507973.9258     25697113.5000           50.5547             1.2865              1.2865
    52     508022.3672     25726920.2500           50.5596             2.0332              2.0333
    53     507661.5664     25729810.7500           50.5236             2.8375              2.8376
    54     508083.4609     25766964.7500           50.5656             2.7394              2.7395
    55     508347.4063     25720342.2500           50.5919             0.4551              0.4552
    56     508211.8438     25706304.0000           50.5784             0.4183              0.4183
    57     509249.0117     25940306.5000           50.6816             3.6071              3.6073
    58     356557.9922     13308791.5000           35.4855             8.0810              8.0814
    59     527117.9922     29472223.5000           52.4600            13.4571             13.4577
    60     635043.9922     42691593.5000           63.2010            15.9498             15.9505
    61     723385.9922     55301851.0000           71.9930            17.9101             17.9110
    62     531807.9922     31680223.2500           52.9268            18.7523             18.7532
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EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX      ALL VARIABLES

                   1            2            3            4            5            6            7

  1          1.000000    -0.112304     0.166064     0.054807     0.047938     0.068730     0.064496
  2         -0.112291     1.000000     0.085188     0.040671     0.175627     0.111438     0.137536
  3          0.166018     0.085188     1.000000     0.114706     0.063830     0.114340     0.107647
  4          0.054907     0.040671     0.114706     1.000000     0.059989     0.091210     0.143254
  5          0.047938     0.175627     0.063830     0.059985     1.000000     0.272028     0.332575
  6          0.068730     0.111438     0.114355     0.091201     0.272031     1.000000     0.648638
  7          0.054496     0.137539     0.107657     0.143260     0.332575     0.648638     1.000000
  8          0.058663     0.123434     0.120490     0.149431     0.206171     0.204885     0.613103
  9          0.063113     0.145621     0.095814     0.116427     0.205701     0.181800     0.454677
 10          0.031189     0.108094     0.184099     0.028747     0.079605     0.087783     0.064662
 11          0.085990     0.109798     0.141973     0.085466     0.056130     0.085471     0.083492
 12          0.028664     0.120395     0.065419     0.072554     0.151945    -0.028272     0.020741
 13          0.091710     0.122699     0.064248     0.023634     0.232284     0.084929     0.167252
 14         -0.004231     0.124565     0.061761     0.009447     0.166786     0.081866     0.137182
 15          0.053871     0.149288     0.090958     0.175030     0.247847     0.140544     0.214702
 16          0.039321     0.154378     0.080863     0.192536     0.227530     0.128747     0.241286
 17          0.058204     0.153261     0.074056     0.156636     0.192627     0.128839     0.246877
 18          0.071994     0.140598     0.080993     0.048874     0.206235     0.098693     0.185891
 19          0.225164     0.020562     0.289324     0.084076     0.098260     0.002353     0.002045
 20          0.070222     0.154057     0.102596     0.039535    -0.017540     0.058081     0.061996
 21          0.075307     0.137973     0.073282     0.063393     0.015776     0.063214     0.080268
 22          0.180121     0.075114     0.266122     0.116911     0.041000     0.132269     0.143169
 23          0.173186     0.158659     0.060833     0.136861     0.037050     0.106532     0.155344
 24          0.177397     0.149442     0.063003     0.129053    -0.004503     0.086313     0.132497
 25          0.013223     0.060259     0.055842     0.029241     0.056708     0.050808     0.075335
 26         -0.031250     0.119194     0.100542     0.064128     0.074829     0.091214     0.107742
 27          0.057159     0.113875     0.071622     0.086680     0.227895     0.151540     0.160671
 28          0.022763     0.121145     0.066353     0.084969     0.171209     0.096758     0.125657
 29          0.073826     0.052691     0.072655     0.237307     0.097161     0.110140     0.160280
 30          0.186470     0.034958     0.292719     0.077330     0.057504     0.071593     0.056498
 31          0.212501     0.062437     0.219037     0.076722     0.025854     0.081561     0.087118
 32          0.161827     0.160886     0.066803     0.153579     0.014554     0.104137     0.140940
 33          0.069495     0.147904     0.040034     0.130923     0.012488     0.094579     0.160103
 34         -0.001656     0.044922     0.109819     0.075097    -0.023742     0.007827     0.017337
 35          0.040444     0.064700     0.083961     0.067750     0.107438     0.061857     0.069202
 36         -0.064487     0.134561     0.087915     0.058257     0.034961     0.092317     0.084800
 37         -0.005766     0.151607     0.083273     0.048849    -0.060142     0.034814     0.031718
 38         -0.034124     0.063855     0.269428     0.089734     0.036083     0.112689     0.094589
 39          0.107992     0.113734     0.273316     0.044837     0.039921     0.121110     0.080084
 40          0.040985     0.026248    -0.005523     0.007779    -0.091340     0.003919     0.010683
 41          0.045816     0.122273     0.158639     0.107920     0.036066     0.089936     0.095052
 42          0.104003     0.089270     0.087610    -0.010364     0.003706     0.062152     0.066129
 43          0.057378     0.167877     0.044429     0.058585     0.032891     0.064432     0.097013
 44          0.024795     0.115750     0.042127     0.052275    -0.058720     0.041474     0.061609
 45          0.028517     0.084595     0.043392     0.080326     0.057917     0.063566     0.087099
 46         -0.042299     0.142799     0.086927     0.055390     0.195188     0.093713     0.112953
 47         -0.004436     0.121693     0.092473     0.047523     0.104518     0.094229     0.110160
 48          0.180117     0.045293     0.212569     0.072375     0.039347     0.078683     0.059634
 49         -0.046596     0.104263     0.064270     0.044891     0.094182     0.072527     0.080202
 50          0.008775     0.118714     0.067280     0.057721     0.189705     0.068281     0.086936
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EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX      ALL VARIABLES

                   1             2             3             4             5             6             7

  51          0.069882      0.062197      0.118440      0.023133      0.059147      0.054329      0.050602
  52          0.087001      0.076195      0.072781      0.049816     -0.034791      0.043367      0.034918
  53         -0.015881      0.106986      0.049260      0.064624      0.020380      0.025306      0.037820
  54         -0.060960      0.153071      0.037713      0.045174      0.143590      0.101184      0.112465
  55          0.215184      0.041186      0.184314      0.021565      0.081982      0.087797      0.084810
  56          0.420792      0.039152      0.322280      0.087561      0.026194      0.065607      0.073987
  57         -0.014828      0.137311      0.046108      0.113176      0.037272      0.074875      0.129619
  58          0.018566      0.251475      0.043026      0.139113      0.378558      0.144656      0.238189
  59          0.123235      0.233572      0.054533      0.143495      0.412796      0.181952      0.280462
  60         -0.003763      0.279924      0.044175      0.179906      0.374342      0.167942      0.269347
  61         -0.086989      0.270262      0.057482      0.125802      0.335592      0.147507      0.222586
  62          0.154027      0.200106      0.044105      0.085207      0.349454      0.138649      0.199243
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EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX      ALL VARIABLES

              8           9           10          11          12          13          14

  1     0.058647    0.063113    0.031189    0.085990    0.028647    0.091710   -0.004259
  2     0.123434    0.145621    0.108094    0.109805    0.120395    0.122699    0.124565
  3     0.120477    0.095802    0.184099    0.141973    0.065419    0.064231    0.061738
  4     0.149431    0.116427    0.028747    0.085466    0.072554    0.023625    0.009447
  5     0.206168    0.205701    0.079605    0.056130    0.151945    0.232230    0.166781
  6     0.204880    0.181800    0.087783    0.085471   -0.028272    0.084922    0.081865
  7     0.613103    0.454677    0.064662    0.083492    0.020745    0.167252    0.137181
  8     1.000000    0.680027    0.058545    0.059469    0.055481    0.123413    0.094043
  9     0.680027    1.000000    0.061355    0.074120    0.111177    0.145162    0.115306
 10     0.058537    0.061355    1.000000    0.148382    0.058285    0.049821    0.031049
 11     0.059469    0.074120    0.148382    1.000000    0.087547    0.065213    0.076030
 12     0.055481    0.111177    0.058285    0.087547    1.000000    0.171181    0.097470
 13     0.123413    0.145162    0.049821    0.065213    0.171181    1.000000    0.436203
 14     0.094043    0.115306    0.031049    0.076030    0.097470    0.436203    1.000000
 15     0.177877    0.206868    0.064645    0.109005    0.247982    0.176848    0.092400
 16     0.240547    0.276157    0.087894    0.120320    0.243795    0.158566    0.099831
 17     0.236818    0.279221    0.118719    0.110517    0.226363    0.098021    0.107836
 18     0.184520    0.195008    0.049181    0.084790    0.190882    0.584492    0.241174
 19     0.052917    0.041410    0.157250    0.147342    0.124848    0.191520    0.078739
 20     0.080895    0.109373    0.105084    0.104275    0.084253    0.057704    0.063467
 21     0.096545    0.117341    0.079559    0.093962    0.128424    0.124206    0.064436
 22     0.123926    0.128108    0.127478    0.147410    0.101644    0.112649    0.154808
 23     0.134701    0.171204    0.055753    0.089649    0.169362    0.136621    0.072715
 24     0.110461    0.150309    0.054206    0.089160    0.145976    0.061663    0.057730
 25     0.082246    0.078562    0.055567    0.122998    0.071409    0.085741    0.080362
 26     0.112261    0.137395    0.128235    0.115193    0.119952    0.091135    0.098259
 27     0.126374    0.147763    0.060510    0.062751    0.154059    0.156067    0.130679
 28     0.104340    0.139439    0.057222    0.087642    0.179270    0.119052    0.107135
 29     0.158539    0.147101   -0.004713    0.074168    0.121938    0.049084    0.039513
 30     0.052353    0.051197    0.131257    0.118439    0.050749    0.110232    0.085700
 31     0.083056    0.084541    0.088463    0.145939    0.064321    0.158440    0.168835
 32     0.128134    0.171214    0.058855    0.112950    0.158787    0.062786    0.050593
 33     0.147891    0.191173    0.034213    0.090359    0.163341    0.076214    0.055104
 34     0.043730    0.054429    0.046660    0.115297    0.074055    0.028298   -0.004025
 35     0.075219    0.081890    0.054442    0.078802    0.097991    0.079943    0.038637
 36     0.087800    0.103251    0.087448    0.101552    0.066673    0.044908    0.057262
 37     0.053269    0.082790    0.083846    0.111821    0.070819    0.046353    0.021075
 38     0.096460    0.091705    0.112840    0.145944    0.070098    0.077187    0.052326
 39     0.098210    0.099786    0.129078    0.108931    0.063017    0.146334    0.167175
 40     0.016955    0.050918   -0.037189    0.057483    0.080925   -0.012108   -0.009579
 41     0.086981    0.094516    0.124286    0.101253    0.051508    0.086842    0.055588
 42     0.047887    0.077142    0.080467    0.122212    0.127771    0.048405    0.044084
 43     0.102728    0.132158    0.056913    0.090364    0.106522    0.047844    0.033876
 44     0.059042    0.082326    0.045278    0.105820    0.080256    0.040037    0.018969
 45     0.072574    0.076534    0.048500    0.074938    0.069441    0.006803    0.028042
 46     0.119062    0.127134    0.094219    0.103978    0.090409    0.086638    0.113041
 47     0.084717    0.102367    0.099337    0.077531    0.095117    0.079801    0.059895
 48     0.057138    0.054564    0.133159    0.110077    0.048669    0.084824    0.073371
 49     0.075616    0.085710    0.065729    0.039793    0.087619    0.074009    0.047085
 50     0.067141    0.063537    0.118474    0.050424    0.065980    0.086139    0.078533
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EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX      ALL VARIABLES

                  8           9          10          11          12          13          14

  51         0.048659    0.039698    0.057383    0.061848    0.039198    0.056062    0.083296
  52         0.055550    0.048476    0.087979    0.060624    0.041791    0.017611    0.029820
  53         0.054581    0.073879    0.074543    0.059242    0.077134    0.029510    0.030983
  54         0.105290    0.108510    0.074360    0.062216    0.098979    0.080386    0.073051
  55         0.075257    0.048426    0.057815    0.155102    0.041301    0.089859    0.099282
  56         0.095000    0.076196    0.090359    0.230262    0.086829    0.143230    0.161009
  57         0.134178    0.160410    0.039280    0.115823    0.124689    0.040222    0.036686
  58         0.196471    0.211773    0.064665    0.077758    0.180278    0.144086    0.118870
  59         0.237311    0.258230    0.105039    0.118521    0.186456    0.150545    0.118485
  60         0.227604    0.250286    0.103075    0.115264    0.180196    0.125435    0.092745
  61         0.194727    0.209880    0.127632    0.108406    0.155053    0.114791    0.112241
  62         0.151143    0.185795    0.078343    0.074220    0.145447    0.152082    0.109549
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EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX   ALL VARIABLES

	15	16	17	18	19	20	21
1	0.053871	0.039321	0.058204	0.071974	0.225164	0.070222	0.075307
2	0.149291	0.154378	0.153261	0.140598	0.020579	0.154061	0.137975
3	0.090948	0.080863	0.074048	0.080976	0.289324	0.102596	0.073270
4	0.175030	0.192536	0.156636	0.048874	0.084076	0.039535	0.063393
5	0.247847	0.227530	0.192627	0.206232	0.098260	-0.017538	0.015776
6	0.140544	0.128747	0.128839	0.098686	0.002353	0.058081	0.063214
7	0.214705	0.241286	0.246880	0.185891	0.002062	0.062000	0.080268
8	0.177861	0.240550	0.236822	0.184520	0.052917	0.080899	0.096545
9	0.206868	0.276159	0.279224	0.195003	0.041410	0.109373	0.117341
10	0.064645	0.087894	0.118719	0.049170	0.157250	0.105084	0.079559
11	0.109005	0.120320	0.110517	0.084790	0.147342	0.104275	0.093955
12	0.247982	0.243795	0.226367	0.190882	0.124871	0.084258	0.128424
13	0.176848	0.158570	0.098025	0.584492	0.191548	0.057710	0.124206
14	0.092400	0.099831	0.107836	0.241164	0.078739	0.063467	0.064436
15	1.000000	0.448177	0.323822	0.238313	0.068813	0.125364	0.189494
16	0.448177	1.000000	0.541054	0.200476	0.034377	0.147231	0.202161
17	0.323822	0.541054	1.000000	0.129627	-0.014698	0.137184	0.142326
18	0.238313	0.200480	0.129631	1.000000	0.215967	0.088372	0.180448
19	0.068813	0.034377	-0.014698	0.215941	1.000000	0.003635	0.068114
20	0.125364	0.147231	0.137184	0.088367	0.003617	1.000000	0.713001
21	0.189494	0.202161	0.142326	0.180442	0.068114	0.713004	1.000000
22	0.109002	0.145750	0.149956	0.139589	0.220486	0.209759	0.229614
23	0.295193	0.347590	0.313649	0.160842	0.030200	0.322487	0.357079
24	0.244980	0.295392	0.300512	0.095748	0.005465	0.354794	0.310871
25	0.102587	0.121388	0.144250	0.064066	0.104859	0.072499	0.093544
26	0.132317	0.179641	0.203636	0.092857	0.082425	0.172257	0.172367
27	0.184362	0.169168	0.153479	0.193507	0.098776	0.069161	0.102984
28	0.214618	0.235438	0.233873	0.136027	0.054035	0.114214	0.134831
29	0.159433	0.219640	0.218644	0.079494	0.071530	-0.004968	0.020957
30	0.023557	0.018048	0.059199	0.053119	0.339526	0.041100	0.046875
31	0.028030	0.016859	0.061845	0.079109	0.208265	0.055565	0.068290
32	0.259675	0.328195	0.311885	0.087482	0.026727	0.309966	0.284355
33	0.259845	0.342954	0.327621	0.101938	0.013561	0.276898	0.260731
34	0.070665	0.115609	0.114802	0.034676	0.123997	0.131749	0.134243
35	0.142688	0.134373	0.129237	0.071125	0.078416	0.121216	0.116363
36	0.105942	0.126247	0.114068	0.080285	0.039490	0.220768	0.209740
37	0.112634	0.144291	0.138126	0.083054	0.053655	0.549514	0.468370
38	0.086987	0.112071	0.118936	0.099041	0.218707	0.099260	0.098685
39	0.079924	0.048293	0.056900	0.133992	0.241124	0.111459	0.126750
40	0.077608	0.129024	0.140606	0.006488	-0.014136	0.121920	0.118333
41	0.069232	0.077190	0.074744	0.078275	0.267119	0.067587	0.092420
42	0.124663	0.151917	0.160622	0.076868	0.062008	0.202799	0.198866
43	0.172530	0.231203	0.229710	0.061592	0.040223	0.341826	0.297783
44	0.127279	0.146884	0.147116	0.024158	0.035809	0.392159	0.335182
45	0.117303	0.139661	0.133259	0.028877	0.032089	0.141753	0.126570
46	0.112788	0.112060	0.103270	0.101768	0.072962	0.102380	0.104652
47	0.132220	0.163037	0.149356	0.081621	0.063942	0.149416	0.137933
48	0.054743	0.051611	0.050266	0.080517	0.332661	0.011195	0.041654
49	0.105410	0.129312	0.124432	0.098637	0.049904	0.094781	0.087857
50	0.103783	0.112187	0.115732	0.056317	0.069663	0.057023	0.056055

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EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX       ALL VARIABLES

                 15            16            17            18            19            20            21

   51         0.065608      0.045030      0.041159      0.054177      0.103457      0.081669      0.079727
   52         0.068192      0.083780      0.095299      0.018675      0.075557      0.157741      0.131002
   53         0.101467      0.122411      0.115897      0.038291      0.060820      0.168667      0.148750
   54         0.141310      0.154934      0.144778      0.101699     -0.007879      0.166468      0.166396
   55         0.032923      0.011931      0.051021      0.082737      0.201875      0.026926      0.019411
   56         0.074482      0.053341      0.091388      0.065820      0.341850      0.106817      0.107494
   57         0.231372      0.258859      0.234610      0.073348      0.013361      0.224200      0.213345
   58         0.254784      0.279782      0.260542      0.152910      0.025407      0.182580      0.174908
   59         0.288150      0.338643      0.324644      0.158571      0.038871      0.217730      0.207570
   60         0.310735      0.358848      0.340199      0.142430      0.031002      0.254808      0.234473
   61         0.252449      0.268358      0.273631      0.133657      0.030104      0.234330      0.204085
   62         0.247373      0.258089      0.239200      0.145015      0.036337      0.210150      0.190492
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EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX ALL VARIABLES

	22	23	24	25	26	27	28
1	0.180121	0.173175	0.177397	0.013223	-0.031250	0.057159	0.022755
2	0.075114	0.158659	0.149445	0.060259	0.119189	0.113875	0.121145
3	0.266080	0.060835	0.063003	0.055842	0.100524	0.071612	0.066347
4	0.116911	0.136861	0.129053	0.029241	0.064128	0.086680	0.084969
5	0.041009	0.037048	-0.004503	0.056708	0.074829	0.227893	0.171209
6	0.132269	0.106529	0.086313	0.050808	0.091214	0.151540	0.096758
7	0.143169	0.155344	0.132497	0.075335	0.107742	0.160671	0.125657
8	0.123941	0.134701	0.110461	0.082246	0.112261	0.126374	0.104342
9	0.128108	0.171204	0.150309	0.078562	0.137395	0.147763	0.139439
10	0.127478	0.055753	0.054206	0.055567	0.128223	0.060510	0.057222
11	0.147385	0.089649	0.089160	0.122983	0.115182	0.062751	0.087642
12	0.101644	0.169362	0.145976	0.071409	0.119945	0.154059	0.179270
13	0.112649	0.136621	0.061668	0.086741	0.091135	0.156072	0.119052
14	0.154808	0.072715	0.057730	0.080377	0.098259	0.130679	0.107135
15	0.109002	0.295193	0.244982	0.102587	0.132312	0.184362	0.214618
16	0.145750	0.347590	0.295392	0.121388	0.179637	0.169168	0.235438
17	0.149956	0.313649	0.300510	0.144250	0.203636	0.153476	0.233872
18	0.139589	0.160846	0.095752	0.064078	0.092857	0.193507	0.136027
19	0.220419	0.033201	0.005465	0.104859	0.082425	0.098776	0.054035
20	0.209759	0.322484	0.354794	0.072499	0.172252	0.069158	0.114212
21	0.229614	0.357079	0.310874	0.093544	0.172367	0.102984	0.134831
22	1.000000	0.174805	0.170666	0.160437	0.257873	0.140764	0.149564
23	0.174805	1.000000	0.820363	0.126730	0.166261	0.115085	0.192767
24	0.170666	0.820361	1.000000	0.108684	0.173568	0.089364	0.163683
25	0.160437	0.126730	0.108684	1.000000	0.112021	0.078888	0.103507
26	0.257894	0.166265	0.173572	0.112021	1.000000	0.122930	0.204553
27	0.140764	0.115085	0.089364	0.078888	0.122930	1.000000	0.859049
28	0.149564	0.192767	0.163685	0.103507	0.204553	0.859049	1.000000
29	0.068145	0.114231	0.097902	0.048046	0.083188	0.165410	0.151908
30	0.290459	0.036828	0.044871	0.143519	0.088148	0.110767	0.078795
31	0.299643	0.052555	0.047637	0.138056	0.099654	0.139038	0.102095
32	0.161689	0.690050	0.702934	0.119983	0.164159	0.100399	0.208047
33	0.152871	0.560867	0.555481	0.130507	0.164013	0.098765	0.196473
34	0.184689	0.131678	0.131682	0.105642	0.197247	0.036252	0.145837
35	0.110871	0.129830	0.124861	0.084020	0.092879	0.073022	0.095660
36	0.157976	0.226857	0.230361	0.094716	0.178738	0.085695	0.118383
37	0.188041	0.321526	0.335337	0.110525	0.158764	0.048723	0.127815
38	0.315579	0.116263	0.105567	0.109934	0.175967	0.141962	0.115317
39	0.229158	0.070805	0.064271	0.103809	0.140692	0.140806	0.093410
40	0.069319	0.206352	0.205269	0.082862	0.089676	0.078208	0.112817
41	0.248312	0.087893	0.074198	0.132671	0.083536	0.096538	0.084763
42	0.180335	0.217689	0.214169	0.114314	0.145924	0.090012	0.129906
43	0.084281	0.339628	0.345166	0.113814	0.138661	0.047567	0.140291
44	0.126113	0.265889	0.279592	0.102044	0.131909	0.055943	0.137352
45	0.034791	0.170245	0.174726	0.036117	0.087714	0.066464	0.088993
46	0.094659	0.104091	0.082162	0.075137	0.114713	0.150609	0.125743
47	0.125015	0.170442	0.157776	0.103616	0.154003	0.098892	0.125207
48	0.199039	0.034322	0.014607	0.096459	0.058020	0.091996	0.052403
49	0.127048	0.124051	0.117927	0.098270	0.114871	0.078395	0.099817
50	0.056162	0.074013	0.063579	0.030813	0.067774	0.066702	0.073360

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EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX      ALL VARIABLES

                  22          23          24          25          26          27          28

   51          0.150513    0.070659    0.078672    0.088696    0.128210    0.072842    0.067335
   52          0.136597    0.165159    0.162889    0.085880    0.124463    0.031016    0.084639
   53          0.090236    0.178890    0.180356    0.096326    0.137608    0.059521    0.102565
   54          0.118123    0.147680    0.146301    0.074255    0.163744    0.115204    0.136791
   55          0.221907    0.006914    0.005067    0.138168    0.077695    0.096945    0.026102
   56          0.423139    0.080254    0.071838    0.137410    0.145821    0.165422    0.112826
   57          0.116509    0.415639    0.423240    0.113203    0.154459    0.085623    0.174247
   58          0.027164    0.251530    0.233782    0.074198    0.097416    0.164803    0.174391
   59          0.054637    0.323885    0.307555    0.113051    0.157633    0.142307    0.177973
   60          0.046990    0.344152    0.330720    0.115239    0.165835    0.126739    0.167767
   61          0.059255    0.277915    0.257045    0.117712    0.168825    0.133536    0.164827
   62          0.043642    0.295969    0.283600    0.092020    0.094913    0.114056    0.133059
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EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX   ALL VARIABLES

	29	30	31	32	33	34	35
1	0.073805	0.186470	0.212437	0.161827	0.069495	-0.001656	0.040444
2	0.052691	0.034958	0.062437	0.160886	0.147904	0.044922	0.064708
3	0.072638	0.292719	0.218987	0.066795	0.040026	0.109819	0.083961
4	0.237307	0.077330	0.076722	0.153579	0.130923	0.075097	0.067759
5	0.097161	0.057504	0.025845	0.014554	0.012486	-0.023742	0.107438
6	0.110133	0.071593	0.081539	0.104137	0.094579	0.007836	0.061857
7	0.160280	0.056514	0.087118	0.140940	0.160103	0.017343	0.059202
8	0.158339	0.052372	0.083056	0.128137	0.147891	0.043739	0.075225
9	0.147101	0.051197	0.084541	0.171216	0.191173	0.054429	0.081896
10	-0.004713	0.131257	0.088429	0.058855	0.034219	0.046674	0.054442
11	0.074158	0.118439	0.145939	0.112950	0.090359	0.115297	0.078802
12	0.121938	0.050749	0.064321	0.158787	0.163341	0.074063	0.097991
13	0.149092	0.110258	0.158440	0.062786	0.076218	0.028308	0.079950
14	0.039513	0.085700	0.168803	0.050593	0.055104	-0.004025	0.038647
15	0.159433	0.023557	0.028018	0.259677	0.259845	0.070665	0.142692
16	0.219637	0.018048	0.016847	0.328195	0.342954	0.115609	0.134377
17	0.218644	0.059199	0.061832	0.311885	0.327621	0.114802	0.129237
18	0.079501	0.053143	0.079109	0.087486	0.101938	0.034685	0.071132
19	0.071530	0.339526	0.208185	0.026727	0.013561	0.124030	0.078416
20	-0.004973	0.041130	0.055550	0.309964	0.276898	0.131756	0.121216
21	0.020957	0.046875	0.068290	0.284353	0.260731	0.134250	0.116363
22	0.068145	0.290459	0.299643	0.161689	0.152871	0.184689	0.110890
23	0.114231	0.036840	0.052555	0.690050	0.560867	0.131678	0.129830
24	0.097902	0.044871	0.047637	0.702934	0.555481	0.131687	0.124861
25	0.048146	0.143519	0.138021	0.119983	0.130507	0.105642	0.084031
26	0.083195	0.088148	0.099654	0.164163	0.164017	0.197257	0.092887
27	0.165410	0.110767	0.139038	0.100399	0.098765	0.036252	0.073022
28	0.151908	0.078795	0.102095	0.208047	0.196473	0.145840	0.095663
29	1.000000	0.056593	0.075255	0.127830	0.144748	0.046203	0.046279
30	0.056593	1.000000	0.166111	0.046287	0.039347	0.089696	0.066408
31	0.075278	0.166111	1.000000	0.081060	0.063392	0.130348	0.069567
32	0.127830	0.046287	0.081050	1.000000	0.662023	0.178266	0.164471
33	0.144748	0.039347	0.063380	0.662023	1.000000	0.153984	0.157761
34	0.046203	0.089665	0.130320	0.178262	0.153984	1.000000	0.095424
35	0.046279	0.066408	0.069544	0.164471	0.157757	0.095424	1.000000
36	0.019367	0.032955	0.088222	0.305395	0.272534	0.151970	0.132714
37	-0.002420	0.084902	0.092012	0.393306	0.344881	0.185581	0.151643
38	0.057876	0.189302	0.187288	0.156938	0.149343	0.198884	0.118384
39	0.024845	0.215033	0.188395	0.102517	0.072690	0.107603	0.122600
40	0.142465	-0.021827	0.004271	0.231418	0.243272	0.122302	0.065272
41	0.081649	0.255176	0.200285	0.089823	0.102482	0.088548	0.061028
42	0.010140	0.108445	0.101868	0.244436	0.232671	0.087314	0.115525
43	0.052182	0.040544	0.030288	0.396894	0.389102	0.171291	0.130294
44	0.031005	0.040872	0.083416	0.312865	0.287169	0.143329	0.104949
45	0.078733	0.053484	0.037315	0.206685	0.170208	0.118332	0.065846
46	0.057899	0.059028	0.115216	0.124657	0.081969	0.053423	0.082549
47	0.066704	0.069226	0.090428	0.205587	0.199659	0.118543	0.093132
48	0.092053	0.225748	0.200785	0.038289	0.020688	0.065389	0.073374
49	0.024748	0.064691	0.065214	0.159960	0.157530	0.114417	0.087397
50	0.024385	0.067501	0.088807	0.095324	0.055674	0.041555	0.043040

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EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX      ALL VARIABLES
                 29            30            31            32            33            34            35

   51         0.001118      0.088653      0.119470      0.084990      0.070839      0.053051      0.065035
   52         0.025482      0.073425      0.078873      0.207575      0.189879      0.143387      0.074963
   53         0.063042      0.060977      0.092294      0.224563      0.202904      0.150951      0.093871
   54         0.036048      0.019631      0.081591      0.179320      0.168756      0.076669      0.084665
   55         0.070696      0.241119      0.212675      0.027640      0.002520      0.081410      0.076684
   56         0.100738      0.329481      0.398919      0.108970      0.081240      0.169181      0.074260
   57         0.117783      0.026354      0.039429      0.535920      0.488236      0.183646      0.126747
   58         0.165450      0.026836      0.046224      0.286212      0.249772      0.060557      0.110344
   59         0.158136      0.024014      0.046626      0.374184      0.315330      0.135777      0.142745
   60         0.162102      0.027737      0.036081      0.408255      0.359766      0.188901      0.154028
   61         0.121437      0.028117      0.052005      0.334624      0.290738      0.172871      0.136330
   62         0.116777      0.031634      0.037152      0.331643      0.285900      0.060108      0.168833
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EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX      ALL VARIABLES

                 36           37           38           39           40           41           42

   1      -0.054487    -0.005766    -0.034124     0.107940     0.040985     0.045816     0.104003
   2       0.134561     0.151607     0.063855     0.113734     0.026248     0.122273     0.089270
   3       0.087900     0.083073     0.269375     0.273275    -0.005523     0.158639     0.087610
   4       0.058249     0.048849     0.089734     0.044815     0.007779     0.107920    -0.010364
   5       0.034959    -0.060142     0.036083     0.039913    -0.091340     0.036066     0.003706
   6       0.092811     0.034814     0.112689     0.121092     0.003919     0.089936     0.062152
   7       0.084800     0.031718     0.094589     0.080084     0.010683     0.095063     0.066129
   8       0.087800     0.053272     0.096467     0.098210     0.016956     0.086995     0.047896
   9       0.105251     0.082790     0.091705     0.099786     0.050918     0.094528     0.077150
  10       0.087438     0.083846     0.112840     0.129051    -0.037189     0.124286     0.080467
  11       0.101552     0.111821     0.145944     0.108931     0.057483     0.101253     0.122212
  12       0.065667     0.070823     0.070098     0.063001     0.080925     0.051508     0.127771
  13       0.044908     0.046358     0.077213     0.146334    -0.012108     0.086842     0.048417
  14       0.057262     0.021076     0.052326     0.167149    -0.009579     0.055588     0.044084
  15       0.105938     0.112634     0.086987     0.079924     0.077608     0.069232     0.124663
  16       0.126243     0.144291     0.112071     0.048283     0.129024     0.077190     0.151917
  17       0.114065     0.138126     0.118936     0.056890     0.140607     0.074734     0.160622
  18       0.080285     0.083059     0.099065     0.133992     0.006488     0.078292     0.076868
  19       0.039466     0.053655     0.218707     0.241059    -0.014136     0.267119     0.062018
  20       0.220763     0.549514     0.099260     0.111459     0.121920     0.067587     0.202791
  21       0.209700     0.468374     0.098703     0.126750     0.118333     0.092420     0.198874
  22       0.157958     0.168054     0.315579     0.229158     0.069319     0.248312     0.180835
  23       0.226857     0.321526     0.116275     0.070805     0.206352     0.087893     0.217689
  24       0.230361     0.335337     0.105567     0.064261     0.205269     0.074198     0.214169
  25       0.094716     0.110532     0.109934     0.103809     0.082862     0.132671     0.114314
  26       0.178738     0.158764     0.175993     0.140692     0.089676     0.083355     0.145936
  27       0.085695     0.048723     0.141962     0.140794     0.078208     0.096538     0.090019
  28       0.118083     0.127807     0.115317     0.093403     0.112817     0.084760     0.129910
  29       0.019360    -0.002415     0.057901     0.024826     0.042465     0.081667     0.010140
  30       0.032955     0.084902     0.189302     0.214972    -0.021827     0.255106     0.108408
  31       0.088222     0.092027     0.187288     0.188395     0.034271     0.203338     0.101902
  32       0.305392     0.393306     0.156938     0.102508     0.231418     0.089823     0.244436
  33       0.272534     0.344881     0.149343     0.072680     0.243272     0.102482     0.232671
  34       0.151962     0.185551     0.198854     0.107580     0.122302     0.088548     0.087314
  35       0.132707     0.151643     0.118384     0.122582     0.065272     0.061028     0.115525
  36       1.000000     0.333327     0.213120     0.218214     0.094382     0.114129     0.174198
  37       0.333322     1.000000     0.206492     0.161900     0.159524     0.131048     0.249907
  38       0.213098     0.206492     1.000000     0.215133     0.049125     0.227725     0.121235
  39       0.218214     0.161900     0.215193     1.000000     0.019256     0.194345     0.091029
  40       0.094382     0.159523     0.049125     0.019256     1.000000     0.004906     0.226756
  41       0.114129     0.131060     0.227725     0.194302     0.004906     1.000000     0.091730
  42       0.174188     0.249907     0.121235     0.091001     0.226756     0.091730     1.000000
  43       0.190539     0.412112     0.044755     0.019325     0.196917     0.085985     0.303274
  44       0.195324     0.442518     0.074392     0.081695     0.163437     0.076179     0.270143
  45       0.095722     0.147396     0.019204     0.018090     0.057172     0.061271     0.085969
  46       0.170653     0.112465     0.130135     0.166086    -0.025615     0.067361     0.082595
  47       0.159143     0.180854     0.117415     0.107254     0.049726     0.090282     0.134811
  48       0.032143     0.065412     0.126274     0.133192    -0.012784     0.239351     0.038825
  49       0.123728     0.126774     0.103776     0.078581     0.058731     0.088352     0.102978
  50      -0.026257     0.014159     0.009060     0.005236    -0.035412     0.064801     0.014720
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EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX      ALL VARIABLES

               36          37          38          39          40          41          42

   51       0.118130    0.085263    0.093809    0.109663    0.014023    0.085178    0.114982
   52       0.154216    0.198766    0.043723    0.116762    0.063332    0.090347    0.139333
   53       0.163033    0.209392    0.078054    0.078928    0.078983    0.095241    0.125707
   54       0.208061    0.180080    0.089229    0.107261    0.035351    0.046952    0.151225
   55       0.016990    0.055495    0.095062    0.244075   -0.012970    0.200719    0.047485
   56       0.120159    0.164406    0.231826    0.253731    0.048457    0.306342    0.181919
   57       0.234257    0.309244    0.126828    0.085178    0.189842    0.108350    0.155623
   58       0.147315    0.187466    0.042509    0.044613    0.048379    0.046371    0.099722
   59       0.159658    0.207448    0.034319    0.039867    0.053970    0.053217    0.087272
   60       0.179132    0.266643    0.052431    0.032479    0.058681    0.075536    0.089152
   61       0.196709    0.248344    0.088241    0.062352    0.032982    0.090632    0.080934
   62       0.153291    0.201836    0.014159    0.037775    0.056101    0.039553    0.089174
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EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX       ALL VARIABLES

               43          44          45          46          47          48          49

  1      0.057378    0.024795    0.028617   -0.042312   -0.004449    0.180117   -0.046615
  2      0.167877    0.115750    0.084595    0.142802    0.121693    0.045308    0.104263
  3      0.044429    0.042127    0.043392    0.086927    0.092473    0.212520    0.064270
  4      0.058585    0.052275    0.080326    0.055390    0.047523    0.072375    0.044900
  5      0.032391   -0.058720    0.057917    0.195188    0.104518    0.039347    0.094182
  6      0.064432    0.041474    0.063565    0.093713    0.094229    0.078683    0.072527
  7      0.097015    0.061609    0.087102    0.112953    0.110160    0.059634    0.080206
  8      0.102708    0.059046    0.072677    0.119066    0.084717    0.057156    0.075622
  9      0.132158    0.082326    0.076537    0.127137    0.102367    0.054564    0.085715
 10      0.056913    0.045278    0.048507    0.094219    0.099337    0.133159    0.065729
 11      0.090364    0.105820    0.074938    0.103978    0.077531    0.110047    0.039793
 12      0.106522    0.080260    0.069441    0.093409    0.095117    0.048669    0.087619
 13      0.047848    0.040042    0.006803    0.086638    0.079801    0.084847    0.074009
 14      0.033876    0.018989    0.028048    0.113041    0.069895    0.073371    0.047083
 15      0.172530    0.127282    0.117303    0.112788    0.132220    0.054743    0.105410
 16      0.231203    0.146886    0.139661    0.112060    0.163037    0.051611    0.129312
 17      0.229710    0.147116    0.133259    0.103270    0.149354    0.050266    0.124432
 18      0.061592    0.024163    0.028877    0.101773    0.081621    0.080539    0.078644
 19      0.040223    0.035809    0.032089    0.072962    0.063942    0.332661    0.049904
 20      0.341824    0.392159    0.141750    0.102380    0.149412    0.011195    0.094781
 21      0.297783    0.335182    0.126570    0.104652    0.137933    0.041654    0.087862
 22      0.084281    0.126125    0.054791    0.094659    0.125315    0.199039    0.127648
 23      0.339628    0.265889    0.170247    0.104080    0.170440    0.034322    0.124059
 24      0.345166    0.279592    0.174725    0.082162    0.157776    0.014607    0.117927
 25      0.113814    0.102052    0.036124    0.075137    0.103616    0.096459    0.098270
 26      0.138661    0.131914    0.087714    0.114718    0.154003    0.058045    0.114879
 27      0.047567    0.055943    0.066467    0.150609    0.098892    0.091998    0.078399
 28      0.140291    0.137354    0.088993    0.125743    0.125207    0.052403    0.099817
 29      0.052182    0.031010    0.078733    0.057889    0.066704    0.092053    0.024748
 30      0.040544    0.040888    0.053484    0.059028    0.069226    0.226748    0.064691
 31      0.030298    0.083434    0.037328    0.115216    0.090428    0.200785    0.065214
 32      0.396894    0.312865    0.206685    0.124657    0.205587    0.038289    0.159961
 33      0.389102    0.287169    0.170208    0.081969    0.199659    0.020688    0.157530
 34      0.171287    0.143329    0.118327    0.053417    0.118537    0.065389    0.114417
 35      0.130291    0.104949    0.065846    0.082544    0.093127    0.073374    0.087397
 36      0.193542    0.195329    0.095726    0.170653    0.169043    0.032143    0.123728
 37      0.412112    0.442508    0.147396    0.112457    0.180854    0.065412    0.126774
 38      0.044755    0.074391    0.019119    0.130135    0.117399    0.126274    0.103776
 39      0.019333    0.081707    0.018101    0.166086    0.107254    0.133192    0.078599
 40      0.196917    0.163437    0.057172   -0.025615    0.049726   -0.012784    0.058731
 41      0.085985    0.076179    0.061271    0.067361    0.090282    0.239351    0.088352
 42      0.303274    0.270143    0.085969    0.082595    0.134811    0.038825    0.102978
 43      1.000000    0.466510    0.214915    0.072260    0.198202    0.017632    0.167908
 44      0.466508    1.000000    0.155704    0.100855    0.165113    0.014084    0.128429
 45      0.214913    0.155704    1.000000    0.132844    0.181441    0.012963    0.096585
 46      0.072260    0.100855    0.132844    1.000000    0.221884    0.060235    0.142725
 47      0.198202    0.165113    0.181441    0.221884    1.000000    0.031811    0.220886
 48      0.017632    0.014084    0.012963    0.060235    0.031811    1.000000    0.034560
 49      0.167908    0.128434    0.096585    0.142725    0.220881    0.034560    1.000000
 50      0.135265    0.074657    0.134259    0.119813    0.144326    0.109362    0.108302
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EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX      ALL VARIABLES

                 43            44            45            46            47            48            49

  51          0.122622      0.098751      0.052647      0.149300      0.220007      0.093611      0.114357
  52          0.282793      0.226101      0.138939      0.118868      0.258661      0.011506      0.174540
  53          0.271695      0.212121      0.183835      0.144019      0.265130      0.029817      0.184884
  54          0.197597      0.184134      0.142419      0.251414      0.320998     -0.034843      0.222462
  55         -0.013628      0.014457     -0.019961      0.048864      0.028100      0.167937      0.018525
  56          0.123171      0.141514      0.055696      0.104338      0.125475      0.291093      0.085465
  57          0.331573      0.264730      0.173183      0.120401      0.193512      0.034771      0.171131
  58          0.289110      0.182022      0.204571      0.239178      0.197510      0.035087      0.137721
  59          0.374768      0.252322      0.287409      0.248358      0.242878      0.017412      0.169745
  60          0.443047      0.291927      0.350815      0.264389      0.277223      0.042802      0.188649
  61          0.351597      0.249503      0.293293      0.295886      0.276500      0.034697      0.180728
  62          0.332813      0.196342      0.199454      0.168326      0.195740      0.027973      0.132576
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EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX   ALL VARIABLES

	50	51	52	53	54	55	56
1	0.008775	0.069852	0.086982	-0.015881	-0.060974	0.215101	0.420792
2	0.116714	0.062197	0.076195	0.106986	0.153068	0.041186	0.039173
3	0.067270	0.118416	0.072766	0.049249	0.037702	0.184248	0.322208
4	0.057721	0.023133	0.049816	0.064624	0.045174	0.021565	0.087561
5	0.189705	0.059147	-0.034791	0.020378	0.143588	0.081982	0.026194
6	0.068281	0.054319	0.043367	0.025301	0.101180	0.087768	0.065638
7	0.086936	0.050609	0.034923	0.037820	0.112465	0.084810	0.074008
8	0.067041	0.048667	0.055350	0.054581	0.105290	0.075257	0.095026
9	0.063537	0.039698	0.048476	0.073875	0.108507	0.048426	0.076196
10	0.118474	0.057383	0.087970	0.074543	0.074360	0.057815	0.090359
11	0.050418	0.061834	0.060624	0.059242	0.062209	0.155061	0.230262
12	0.065980	0.039198	0.041791	0.077134	0.098979	0.041275	0.086829
13	0.086139	0.056073	0.017611	0.029510	0.080386	0.089859	0.143230
14	0.078533	0.083296	0.029820	0.030983	0.073044	0.099240	0.161019
15	0.103783	0.065608	0.068192	0.101464	0.141310	0.032907	0.074482
16	0.112187	0.045024	0.083776	0.122411	0.154932	0.011931	0.053341
17	0.115729	0.041159	0.095296	0.115895	0.144775	0.051021	0.091388
18	0.056322	0.054187	0.018675	0.038291	0.101699	0.082767	0.065852
19	0.069567	0.103420	0.075534	0.060803	-0.007897	0.201770	0.341850
20	0.057023	0.081669	0.157741	0.168664	0.166464	0.026905	0.106817
21	0.156055	0.079727	0.131087	0.148747	0.166396	0.019411	0.107494
22	0.056062	0.150513	0.136580	0.090236	0.118123	0.221907	0.423139
23	0.074013	0.070659	0.165156	0.178890	0.147680	0.006914	0.080271
24	0.063579	0.078672	0.162880	0.180353	0.146298	0.005067	0.071838
25	0.030813	0.088680	0.085880	0.096319	0.074248	0.138168	0.137410
26	0.067779	0.128210	0.124463	0.137608	0.163744	0.077695	0.145821
27	0.066702	0.072842	0.031016	0.059521	0.115204	0.096945	0.165422
28	0.073360	0.067335	0.084636	0.102564	0.136789	0.026102	0.112826
29	0.024386	0.001118	0.025482	0.063042	0.036043	0.070696	0.100771
30	0.067501	0.088653	0.073425	0.060961	0.019615	0.241020	0.329481
31	0.088807	0.119502	0.078873	0.092294	0.081591	0.212675	0.399019
32	0.095324	0.084990	0.207575	0.224563	0.179318	0.027640	0.108984
33	0.055674	0.070839	0.189879	0.202904	0.168753	0.102505	0.081256
34	0.041550	0.053051	0.143378	0.150945	0.076662	0.081373	0.169140
35	0.143040	0.065035	0.074956	0.093866	0.084658	0.076654	0.074260
36	-0.026250	0.113130	0.154216	0.163033	0.208061	0.016990	0.120089
37	0.014156	0.085263	0.198762	0.209388	0.180080	0.055475	0.164406
38	0.009067	0.093839	0.043701	0.078054	0.089229	0.096062	0.231826
39	0.005236	0.109689	0.116762	0.078928	0.107261	0.244075	0.253812
40	-0.035412	0.114023	0.063332	0.078983	0.035351	-0.012970	0.048457
41	0.064601	0.085178	0.090331	0.095230	0.046952	0.200640	0.306342
42	0.014713	0.114982	0.139323	0.125700	0.151225	0.047485	0.181919
43	0.135265	0.122622	0.282793	0.271695	0.197594	-0.013628	0.123171
44	0.074554	0.093744	0.226197	0.212121	0.184131	0.014438	0.141514
45	0.134259	0.052641	0.138935	0.183832	0.142416	-0.019979	0.055696
46	0.119813	0.149300	0.118864	0.144016	0.251414	0.048864	0.104338
47	0.144328	0.220007	0.258661	0.265130	0.320695	0.028081	0.125496
48	0.109362	0.093580	0.011506	0.029817	-0.034857	0.167848	0.291190
49	0.118372	0.114357	0.174534	0.184884	0.222457	0.018496	0.085496
50	1.000000	0.115630	0.092544	0.127966	0.122843	0.025251	0.055366

```
EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX       ALL VARIABLES

                    50          51          52          53          54          55          56

     51        0.115630    1.000000    0.196979    0.167347    0.228031    0.089952    0.207407
     52        0.092548    0.196988    1.000000    0.307829    0.204188    0.005995    0.160982
     53        0.127966    0.167347    0.307829    1.000000    0.221572    0.024812    0.098227
     54        0.122843    0.228031    0.204188    0.221572    1.000000   -0.027696    0.106585
     55        0.025251    0.089952    0.005995    0.024812   -0.027696    1.000000    0.367975
     56        0.055366    0.207407    0.160982    0.098227    0.106585    0.367844    1.000000
     57        0.073771    0.057521    0.171599    0.214729    0.165443   -0.000500    0.059543
     58        0.209530    0.109316    0.128099    0.197273    0.214923    0.021693    0.018379
     59        0.261492    0.088008    0.189397    0.244621    0.232280    0.013551    0.025056
     60        0.303190    0.099816    0.206069    0.299341    0.268027    0.016365   -0.000418
     61        0.284616    0.104198    0.181097    0.274404    0.275930    0.030838    0.002783
     62        0.201332    0.098848    0.168227    0.195388    0.206969    0.018536    0.033846
```

EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX ALL VARIABLES

	57	58	59	60	61	62
1	-0.014828	0.018562	0.123235	-0.003766	-0.086994	0.154025
2	0.137311	0.251475	0.233572	0.279924	0.270261	0.200106
3	0.046099	0.043022	0.054533	0.044173	0.057479	0.044103
4	0.113172	0.139111	0.143496	0.179905	0.125801	0.085207
5	0.037271	0.378557	0.412796	0.374342	0.335591	0.349454
6	0.074871	0.144654	0.181952	0.167942	0.147506	0.138649
7	0.129619	0.238189	0.280462	0.269347	0.222585	0.199243
8	0.134178	0.196471	0.237311	0.227604	0.194727	0.151143
9	0.160407	0.211771	0.258231	0.250286	0.209879	0.185795
10	0.039275	0.064662	0.105039	0.103073	0.127632	0.078343
11	0.115818	0.077756	0.118521	0.115264	0.108404	0.074219
12	0.124686	0.180278	0.186457	0.180196	0.155053	0.145447
13	0.040222	0.144084	0.150546	0.125436	0.114791	0.152082
14	0.036686	0.118868	0.118486	0.092745	0.112239	0.109549
15	0.231372	0.254783	0.288150	0.310734	0.252448	0.247373
16	0.258857	0.279782	0.338644	0.358848	0.288357	0.258088
17	0.234608	0.260541	0.324644	0.340199	0.273630	0.239200
18	0.073348	0.152911	0.158571	0.142430	0.133656	0.145015
19	0.013361	0.025401	0.038875	0.031002	0.030099	0.036337
20	0.224197	0.182579	0.217730	0.254808	0.234329	0.210150
21	0.213342	0.174908	0.207570	0.234472	0.204084	0.190492
22	0.116509	0.027159	0.054637	0.046987	0.059255	0.043642
23	0.415639	0.251529	0.323885	0.344152	0.277915	0.295969
24	0.423238	0.233782	0.307555	0.330720	0.257045	0.283600
25	0.113203	0.074198	0.113052	0.115239	0.117712	0.092020
26	0.154459	0.097414	0.157634	0.165835	0.168825	0.094913
27	0.085623	0.164802	0.142307	0.126739	0.133535	0.114056
28	0.174246	0.174390	0.177973	0.167787	0.164826	0.133059
29	0.117779	0.165448	0.158136	0.162102	0.121435	0.116777
30	0.026342	0.026830	0.024014	0.027737	0.028112	0.031632
31	0.039417	0.046224	0.046629	0.036081	0.052005	0.037152
32	0.535918	0.286211	0.374184	0.408255	0.334623	0.331643
33	0.488236	0.249771	0.315330	0.359766	0.290738	0.285900
34	0.183646	0.060554	0.135776	0.188900	0.172869	0.060107
35	0.126743	0.110342	0.142744	0.154028	0.136328	0.168832
36	0.234257	0.147313	0.159659	0.179133	0.196708	0.153291
37	0.309242	0.187465	0.207448	0.266643	0.248343	0.201836
38	0.126816	0.042504	0.034319	0.052428	0.088241	0.014156
39	0.085178	0.044613	0.039867	0.032479	0.062352	0.037775
40	0.189842	0.048379	0.053970	-0.058681	0.032982	0.056101
41	0.108341	0.046367	0.053217	0.075536	0.090632	0.039553
42	0.155623	0.099719	0.087272	0.089152	0.080931	0.089174
43	0.331573	0.289109	0.374768	0.443047	0.351596	0.332813
44	0.264700	0.182022	0.252322	0.291927	0.249502	0.196342
45	0.173181	[illegible]	0.287409	0.350815	0.293293	0.199454
46	0.120401	0.239177	0.248358	0.264389	0.295886	0.168326
47	0.193512	0.197509	0.242878	0.277223	0.276500	0.195740
48	0.034760	0.035087	0.017412	0.042799	0.034693	0.027973
49	0.171127	0.137719	0.169745	0.188649	0.180726	0.132575
50	0.073769	0.209529	0.261492	0.303190	0.284615	0.201331

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EMP-FACTOR ANALYSIS 12TH GRADE

CORRELATION MATRIX      ALL VARIABLES

                     57             58             59             60             61             62

   51             0.057515       0.109314       0.088009       0.099818       0.104196       0.098848
   52             0.171595       0.128099       0.189398       0.206069       0.181097       0.168227
   53             0.214729       0.197272       0.244621       0.299341       0.274404       0.195388
   54             0.165443       0.214923       0.232280       0.268027       0.275930       0.206969
   55            -0.000515       0.021693       0.013555       0.016365       0.030838       0.018536
   56             0.059526       0.018371       0.025056      -0.000418       0.002776       0.033846
   57             1.000000       0.265236       0.332792       0.380548       0.331907       0.265748
   58             0.265237       1.000000       0.598252       0.605448       0.583925       0.564167
   59             0.332792       0.598251       1.000000       0.805671       0.706341       0.601657
   60             0.380548       0.605448       0.805671       1.000000       0.797777       0.580822
   61             0.331907       0.583925       0.706342       0.797777       1.000000       0.539459
   62             0.265748       0.564166       0.601657       0.580822       0.539459       1.000000
```

Table IV.1 - Amount and Cumulative Percent of Variance Accounted for by Each Principal Component for the Ninth and Twelfth Grades

	NINTH			TWELFTH	
INDEX	ROOT	PER CENT	INDEX	ROOT	PER CENT
1	7.6941	16.37	1	7.4589	15.87
2	2.3478	21.37	2	3.2180	22.72
3	2.0107	25.64	3	2.1646	27.32
4	1.7443	29.36	4	1.8044	31.16
5	1.4840	32.51	5	1.6355	34.64
6	1.3613	35.41	6	1.2939	37.39
7	1.2915	38.16	7	1.2733	40.10
8	1.2160	40.74	8	1.2358	42.74
9	1.0476	42.97	9	1.1181	45.11
10	1.0236	45.15	10	1.0415	47.33
11	0.9946	47.27	11	1.0171	49.49
12	0.9838	49.36	12	0.9790	51.58
13	0.9711	51.43	13	0.9623	53.62
14	0.9596	53.47	14	0.9466	55.64
15	0.9386	55.47	15	0.9282	57.61
16	0.8964	57.37	16	0.9046	59.54
17	0.8771	59.24	17	0.8730	61.40
18	0.8611	61.07	18	0.8526	63.21
19	0.8479	62.88	19	0.8381	64.99
20	0.8367	64.66	20	0.8225	66.74
21	0.8154	66.39	21	0.8050	68.46
22	0.8016	68.10	22	0.7828	70.12
23	0.7983	69.79	23	0.7693	71.76
24	0.7786	71.45	24	0.7653	73.39
25	0.7605	73.07	25	0.7537	74.99
26	0.7562	74.68	26	0.7342	76.55
27	0.7528	76.28	27	0.7138	78.07
28	0.7226	77.82	28	0.7076	79.58
29	0.7188	79.35	29	0.6997	81.06
30	0.7096	80.86	30	0.6877	82.53
31	0.7047	82.36	31	0.6677	83.95
32	0.7039	83.85	32	0.6521	85.34
33	0.6870	85.32	33	0.6456	86.71
34	0.6672	86.73	34	0.6284	88.05
35	0.6556	88.13	35	0.6049	89.33
36	0.6542	89.52	36	0.5960	90.60
37	0.6286	90.86	37	0.5640	91.80
38	0.6062	92.15	38	0.5552	92.98
39	0.5953	93.42	39	0.4889	94.02
40	0.5839	94.66	40	0.4633	95.01
41	0.5114	95.75	41	0.4429	95.95
42	0.4666	96.74	42	0.4356	96.88
43	0.4091	97.61	43	0.4216	97.78
44	0.3966	98.45	44	0.3451	98.51
45	0.2976	99.09	45	0.2710	99.09
46	0.2718	99.66	46	0.2663	99.65
47	0.1578	100.00	47	0.1630	100.00

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EMP-FACTOR ANALYSIS 12TH GRADE

VARIMAX FACTORS

                      8              9             10             11

   3          -0.097173       0.351096       0.088545      -0.077079
   4          -0.433701      -0.138577       0.129473      -0.066487
   7          -0.212586      -0.114466      -0.317461       0.078280
  10           0.002686       0.663342       0.043505      -0.047465
  12           0.279821       0.235476       0.275298      -0.193801
  13          -0.004114      -0.029924       0.067448      -0.016427
  14           0.011863      -0.062955      -0.250930      -0.069175
  15           0.033483       0.091292       0.102521      -0.010629
  16           0.070495       0.084153       0.024343      -0.135011
  17           0.137462       0.077750      -0.094506      -0.180514
  18          -0.023422       0.041037       0.164941      -0.012847
  19          -0.017658       0.265784       0.496847      -0.016035
  20          -0.007994       0.128394      -0.099852      -0.097822
  21          -0.017187       0.135912      -0.045953      -0.113414
  22           0.019872       0.100506      -0.147753      -0.365266
  23           0.044345       0.094533      -0.048315      -0.046937
  24           0.045270       0.090586      -0.079113      -0.049883
  25           0.259905      -0.150684      -0.019114      -0.044770
  26           0.094452       0.174308      -0.166595      -0.590836
  28           0.132034       0.022493      -0.011273      -0.433623
  31          -0.012114      -0.033836      -0.108019      -0.180463
  32           0.059357       0.005558       0.016004      -0.058211
  33           0.114363      -0.067454       0.034740      -0.061271
  34          -0.062468      -0.178151       0.287641      -0.615417
  35           0.119878      -0.026491       0.210331       0.114258
  36           0.019116       0.009532      -0.061499      -0.113678
  37           0.077655      -0.027557       0.070853      -0.064609
  38          -0.078232       0.131684       0.082052      -0.340920
  39          -0.003269       0.139149      -0.015228      -0.016788
  40           0.494583      -0.190562       0.106563      -0.190333
  41          -0.088227       0.017363       0.209591       0.036297
  42           0.576982       0.056931      -0.021406      -0.004969
  43           0.232719      -0.123965       0.174455       0.032879
  44           0.198995      -0.133966       0.080661       0.009475
  45          -0.215013      -0.057540       0.140930      -0.101468
  46          -0.110413       0.195275      -0.175754       0.004124
  47           0.014345       0.097858      -0.057988      -0.062386
  48          -0.040370       0.258748       0.289746       0.080100
  49           0.034952      -0.031402       0.101806      -0.095959
  50          -0.167094       0.287569       0.033959      -0.007992
  51           0.168585       0.171901      -0.207029       0.044293
  52           0.071757      -0.049805       0.096226      -0.044548
  53          -0.001857      -0.072280       0.176343      -0.087226
  54           0.055672       0.090764      -0.230774      -0.065043
  55           0.092908      -0.065272      -0.077632       0.080035
  56           0.117611       0.015914       0.000741      -0.124316
  57          -0.001659      -0.103041       0.118239      -0.090633
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EMP-FACTOR ANALYSIS 12TH GRADE

VARIMAX FACTORS

                      1            2            3            4            5            6            7

  3            0.452974     0.036413     0.075497    -0.019868     0.037556     0.016002     0.187079
  4            0.171198     0.037430     0.395196    -0.025541     0.100899     0.110627     0.034099
  7            0.198067     0.034473     0.503362    -0.081760    -0.126661     0.072132     0.055927
 10            0.106020     0.070440     0.077869    -0.099054     0.050376     0.003863     0.027781
 12           -0.053287    -0.007897     0.298064    -0.044222    -0.250565     0.076787    -0.010093
 13            0.112446     0.033498     0.092104    -0.044554    -0.846774     0.028316     0.013531
 14            0.201964    -0.008564     0.015224    -0.074425    -0.623654     0.041528    -0.065311
 15           -0.003501     0.071038     0.625644    -0.076988    -0.171954     0.168575     0.051190
 16           -0.010572     0.067985     0.711989    -0.074330    -0.086616     0.236351    -0.011458
 17            0.057522     0.032018     0.662569    -0.075151     0.002696     0.231345    -0.059689
 18            0.024583     0.077610     0.182795    -0.029745    -0.755992     0.035860     0.117946
 19            0.464415    -0.022115    -0.055389    -0.038521    -0.209604    -0.009499     0.087441
 20            0.023244     0.836786     0.025875    -0.048336    -0.148978     0.181997     0.054073
 21            0.024249     0.790556     0.090524    -0.011744    -0.148991     0.158598     0.060127
 22            0.537331     0.164493     0.075092    -0.029371    -0.061264     0.085209     0.104128
 23            0.030639     0.184121     0.159508    -0.050518    -0.115950     0.830888    -0.003013
 24            0.030652     0.191404     0.105592    -0.052412    -0.039457     0.848663    -0.007981
 25            0.282155     0.012100     0.176308    -0.120803    -0.033818     0.046431     0.061547
 26            0.088555     0.100984     0.113997    -0.145525    -0.049853     0.072682     0.055514
 28            0.033503     0.034336     0.294375    -0.111114    -0.126982     0.096309     0.000037
 31            0.582428     0.006873    -0.052787    -0.104328    -0.128219     0.030137    -0.047749
 32            0.055065     0.162166     0.146074    -0.167257    -0.002066     0.830727     0.076855
 33            0.031620     0.141666     0.212091    -0.154797    -0.012227     0.716236     0.091518
 34            0.132586     0.107509    -0.016281    -0.149693     0.052353     0.095867     0.063756
 35            0.073780     0.108044     0.270189    -0.124480    -0.005020     0.031579     0.348644
 36            0.027886     0.184668    -0.002292    -0.243298    -0.007347     0.246940     0.544434
 37            0.093318     0.673954    -0.008097    -0.159512     0.021171     0.262247     0.229226
 38            0.289546     0.013790     0.049493    -0.041524     0.015716     0.097528     0.463330
 39            0.357944     0.056015    -0.018036    -0.115065    -0.160668     0.021254     0.477414
 40            0.002494     0.071257     0.078113     0.020513     0.071102     0.242094     0.014546
 41            0.503473     0.051819     0.085801    -0.085852     0.011362     0.061129     0.121717
 42            0.151509     0.236829     0.133352    -0.145140     0.026677     0.127554     0.076593
 43            0.047591     0.453112     0.160675    -0.345274     0.045255     0.298317    -0.138811
 44            0.089960     0.577656     0.085882    -0.260590     0.055412     0.167277    -0.036573
 45            0.005577     0.166567     0.137310    -0.343961     0.041803     0.148411    -0.186005
 46            0.040602     0.012854     0.110512    -0.431910    -0.113219     0.013050     0.249855
 47            0.040019     0.041430     0.087882    -0.608190    -0.042390     0.100498     0.069779
 48            0.494910    -0.012581     0.046545     0.019982    -0.033721     0.030692    -0.069404
 49            0.014253    -0.007539     0.100842    -0.455276    -0.062618     0.063227     0.115245
 50            0.101942     0.033865     0.129985    -0.323178    -0.069258     0.041570    -0.447569
 51            0.231446    -0.015391    -0.052106    -0.445937    -0.036431     0.016851    -0.012217
 52            0.108616     0.132833    -0.062250    -0.548288     0.045937     0.131153    -0.052993
 53            0.047574     0.129661    -0.000045    -0.563766     0.020771     0.144276    -0.048488
 54           -0.050461     0.106587     0.121804    -0.580027    -0.076360     0.029257     0.151228
 55            0.596984    -0.006939     0.055531     0.049608    -0.054491    -0.038054     0.056038
 56            0.740088     0.079624    -0.014554    -0.120946    -0.050858     0.015408     0.002017
 57            0.007413     0.111869     0.153218    -0.230116     0.017102     0.585701     0.117235
```

Means, Standard Deviations, Intercorrelations and Varimax Factors for Items From the Ninth Grade Student Questionnaire

The variable numbers and titles for the ninth grade student variables on the following pages are:

1 Sex (Q 3)

2 Age (Q 4)

3 Area in Which the Student Has Spent Most of His Life (Q 5)

4 Type of Community in Which Student Has Spent Most of His Life (Q 6)

5 Racial-Ethnic Differences (or Group Membership) (Q 7+)

6 Number of Persons Living in Home (Q 9)

7 Number of Siblings (Q 10)

8 Number of Older Siblings (Q 11)

9 Number of Siblings Dropped Out of High School (Q 12)

10 Parents Speak a Foreign Language in the Home (Q 13)

11 Student Speaks a Foreign Language Outside of School (Q 14)

12 Number of Rooms in the Home (Q 15)

13 Who Acts as Father (Q 16)

14 Who Acts as Mother (Q 17)

15 Father's Occupational Level (Q 18)

16 Father's Educational Level (Q 19)

17 Mother's Educational Level (Q 20)

18 Family's Source of Income (Q 22)

19 Mother's Work (Q 23)

20 Mother's Desire for Child's Academic Excellence (Q 24)

21 Father's Desire for Child's Academic Excellence (Q 25)

22 School Discussions With Parents (Q 26)

23 Father's Desire for Child's Educational Level (Q 27)

24 Mother's Desire for Child's Educational Level (Q 28)

25 Frequency of Parents PTA Attendance (Q 29)

26 Pre-School Reading (Q 30)

27 Appliances in the Home (Q's 31-34, 37, 38)

28 Reading Materials in the Home (Q's 35, 36, 39, 41, 42)

29 Kindergarten Attendance (Q 44)

30 Frequency of Changes in School (Q 46)

31 Recency of Change in School (Q 47)

32 Desire for Higher Education (Q 48)

33 College Plans (Q 53)

34 Number of Books Read During Summer (Q 54)

35 Hours Watching TV (Q 55)

36 Attitude Towards School (Q 56)

37 Student Own Desire to Excel (Q 57)

38 Study Time (Q 58)

39 Voluntary Absences (Q 60)

40 Extra-Curricular Activities (Q's 65, 67-70)

41 Outside Work (Q 86)

42 Social Rating (Q 87)

43 Brightness (Q 88)

44 Teacher's Expectations (Q 91)

45 Life Condition (Q 92)

46 Work Success (Q 93)

47	Getting Ahead (Q 94)
48	Success in Life (Q 95)
49	Education in Job (Q 96)
50	Sacrifice (Q 97)
51	Want to Change (Q 98)
52	Learning Problem (Q 99)
53	Teaching Rate (Q 100)
54	Tough Job (Q 101)
55	Ability to Do Well (Q 102)
56	Successful Life (Q 103)
57	Occupational Level Preferred (Q 106)
58	Non-Verbal Test Score
59	General Information
60	Verbal Ability
61	Reading Comprehension
62	Mathematics Achievement

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EMP-FACTOR ANALYSIS 9TH GRADE

ALL VARIABLES

THE NUMBER OF OBSERVATIONS IS       12000.

VARIABLE        SUMS          SUMS OF SQUARES           MEAN            SIGMA(N)         SIGMA(N-1)
    1       601610.4219      30164155.7500            50.1342           0.4914            0.4914
    2       601963.6719      30345274.5000            50.1636           3.5188            3.5190
    3       601624.9922      30177746.7500            50.1354           1.1191            1.1191
    4       603240.2188      30364415.7500            50.2700           1.8147            1.8148
    5       601787.4453      30431922.5000            50.1490           4.5909            4.5911
    6       601746.6797      30252430.5000            50.1456           2.5415            2.5416
    7       602072.4297      30321085.0000            50.1727           3.0752            3.0754
    8       602110.1406      30287476.5000            50.1758           2.5181            2.5182
    9       602453.2266      30352231.7500            50.2044           2.9778            2.9779
   10       601983.2813      30219727.7500            50.1653           1.3251            1.3252
   11       601929.6719      30215208.0000            50.1608           1.3519            1.3519
   12       601597.2422      30237712.5000            50.1331           2.5458            2.5460
   13       602151.9531      30278154.2500            50.1793           2.2835            2.2836
   14       602335.3984      30274932.2500            50.1946           1.8470            1.8471
   15       604655.3516      30618918.0000            50.3879           3.5541            3.5542
   16       602343.7734      30403075.2500            50.1953           3.7443            3.7445
   17       602301.2344      30396362.2500            50.1918           3.7171            3.7172
   18       603117.5156      30377419.5000            50.2598           2.3248            2.3249
   19       602120.6328      30218967.0000            50.1767           0.7376            0.7377
   20       602012.1719      30290593.5000            50.1677           2.7240            2.7241
   21       602369.4453      30318591.7500            50.1975           2.6010            2.6011
   22       602331.4688      30246287.2500            50.1943           1.0283            1.0283
   23       602472.2109      30404949.5000            50.2060           3.6196            3.6198
   24       602271.3594      30378249.2500            50.1893           3.5436            3.5437
   25       602071.0156      30230094.7500            50.1726           1.3734            1.3735
   26       602152.8672      30284297.7500            50.1794           2.3914            2.3915
   27      3560867.8125     0.10692549E 10           296.7390          32.4122           32.4136
   28      2958602.5625     0.73913446E 09           246.5502          28.4171           28.4183
   29       602301.1484      30269053.5000            50.1918           1.7911            1.7912
   30       602697.3594      30279728.5000            50.2248           0.8844            0.8845
   31       603160.8516      30327288.5000            50.2634           0.9297            0.9297
   32       603030.9609      30496516.7500            50.2526           4.0068            4.0070
   33       603531.5078      30479740.7500            50.2943           3.2345            3.2347
   34       603271.8984      30358675.5000            50.2727           1.5967            1.5968
   35       603325.2422      30387683.7500            50.2771           2.1260            2.1261
   36       603761.7031      30456026.2500            50.3135           2.5606            2.5607
   37       603740.9141      30465477.2500            50.3117           2.7420            2.7421
   38       603887.9766      30421212.7500            50.3240           1.6113            1.6114
   39       603626.0391      30390057.2500            50.3022           1.4821            1.4821
   40        12679.9999         25397.9990             1.0567           1.0000            1.0000
   41       606713.5156      30682637.2500            50.5595           0.7922            0.7922
   42       606390.5234      30661750.7500            50.5325           1.2681            1.2681
   43       607311.7031      30891111.2500            50.6093           3.5996            3.5998
   44       607626.1016      30805617.5000            50.6355           1.7833            1.7834
   45       607927.3438      30866680.5000            50.6606           2.3929            2.3930
   46       608176.0078      31057540.0000            50.6813           4.4194            4.4195
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EMP-FACTOR ANALYSIS 9TH GRADE

ALL VARIABLES

THE NUMBER OF OBSERVATIONS IS      12000.

VARIABLE       SUMS          SUMS OF SQUARES          MEAN          SIGMA(N)         SIGMA(N-1)
    47      608113.0469       30921801.5000          50.6761          2.9582           2.9583
    48      608261.4922       30845001.7500          50.6885          1.0474           1.0475
    49      608398.5313       30899284.7500          50.6999          2.1125           2.1126
    50      608481.1172       30912158.0000          50.7068          2.1995           2.1996
    51      608071.1172       30866623.7500          50.6726          2.1230           2.1231
    52      608472.2266       30904099.7500          50.7060          2.0594           2.0595
    53      608546.6094       30946661.0000          50.7122          2.6757           2.6758
    54      608690.3672       30884218.0000          50.7242          0.8605           0.8607
    55      608642.4297       30883443.5000          50.7202          1.0399           1.0399
    56      608841.6641       31027659.0000          50.7368          3.3786           3.3787
    57      610922.8672       31248109.0000          50.9102          3.4866           3.4868
    58      435036.9961       16781644.7500          36.2531          9.1752           9.1756
    59      596978.9922       32836552.2500          49.7482         16.1707          16.1714
    60      607704.9922       33621054.5000          50.6421         15.3992          15.3998
    61      684424.9922       43201482.5000          57.0354         18.6302          18.6310
    62      539247.9922       27057599.2500          44.9373         15.3439          15.3446
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EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX       ALL  VARIABLES

                 1              2              3              4              5              6              7

    1        1.000000       0.145824       0.247106       0.101829       0.039403       0.052795       0.037469
    2        0.145824       1.000000       0.110756       0.093120       0.161798       0.144536       0.188245
    3        0.247144       0.110756       1.000000       0.072024       0.122362       0.087117       0.067952
    4        0.101806       0.093120       0.072024       1.000000       0.107747       0.128687       0.165629
    5        0.039412       0.161798       0.122362       0.107747       1.000000       0.299390       0.316655
    6        0.052795       0.144533       0.087117       0.128687       0.299388       1.000000       0.670256
    7        0.037455       0.188245       0.067946       0.165629       0.316653       0.670256       1.000000
    8        0.072123       0.147116       0.090223       0.150587       0.212446       0.275131       0.609852
    9        0.067766       0.228897       0.109236       0.133695       0.182530       0.212964       0.424993
   10        0.095078       0.086693       0.145261      -0.009391       0.134785       0.068973       0.054650
   11        0.122927       0.087116       0.133053       0.051605       0.101097       0.087002       0.079563
   12        0.116464       0.158182       0.113555       0.112151       0.210856       0.018611       0.054782
   13        0.077732       0.168799       0.102558       0.046674       0.270294       0.087103       0.167940
   14        0.120843       0.184577       0.113893       0.051227       0.184435       0.097190       0.121569
   15        0.030739       0.167977       0.052422       0.183267       0.294104       0.194281       0.225702
   16        0.053372       0.203131       0.067573       0.195772       0.243491       0.186213       0.246067
   17        0.049840       0.220023       0.075972       0.180528       0.222998       0.194672       0.264061
   18        0.037674       0.164686       0.136586       0.063700       0.243435       0.104140       0.175786
   19        0.273621       0.053567       0.194000       0.063513       0.132058      -0.022359       0.004785
   20        0.025633       0.181517       0.094177       0.060284       0.079315       0.131804       0.130405
   21        0.066550       0.171429       0.120425       0.079130       0.108643       0.129893       0.146274
   22        0.188289       0.107192       0.131150       0.073864       0.041780       0.125735       0.151031
   23       -0.022335       0.230300       0.069310       0.151838       0.100228       0.167738       0.222517
   24       -0.027660       0.238581       0.075598       0.128663       0.064825       0.160797       0.199714
   25        0.186619       0.135985       0.107813       0.064628       0.023139       0.065975       0.096988
   26        0.180838       0.177806       0.108846       0.079608       0.111636       0.127276       0.138310
   27        0.057947       0.145371       0.069594       0.092010       0.219946       0.126032       0.153711
   28        0.072443       0.156323       0.103099       0.098721       0.195064       0.118049       0.156366
   29        0.128923       0.130374       0.084729       0.287717       0.086530       0.116704       0.149604
   30        0.272498       0.146608       0.191502      -0.007022       0.087996       0.085446       0.107979
   31        0.156227       0.111147       0.104188      -0.007458       0.072180       0.067136       0.090119
   32       -0.000254       0.266227       0.063485       0.150041       0.078038       0.159249       0.209341
   33        0.013434       0.232544       0.048535       0.132323       0.003628       0.141114       0.185853
   34        0.190101       0.106999       0.071704       0.043843       0.005784       0.028062       0.045105
   35        0.083651       0.093286       0.076900       0.071915       0.184963       0.110603       0.122503
   36        0.145349       0.194211       0.079706       0.061539       0.080628       0.101949       0.115746
   37        0.099662       0.196662       0.102731       0.034386       0.045083       0.099374       0.113798
   38        0.211849       0.124002       0.116033       0.066359       0.140817       0.097826       0.104857
   39        0.266278       0.174827       0.167954       0.017181       0.060394       0.083640       0.105874
   40       -0.057005       0.014577      -0.015017       0.017529      -0.066860       0.001033      -0.011645
   41        0.420738       0.095171       0.141354       0.067343       0.029181       0.081614       0.100381
   42        0.172608       0.099010       0.104822       0.040368       0.032101       0.069332       0.085575
   43        0.051526       0.202219       0.056109       0.077955       0.039032       0.107417       0.138310
   44        0.079852       0.124756       0.093693       0.040151       0.006540       0.056200       0.065656
   45        0.065959       0.098133       0.036737       0.065387       0.100917       0.079700       0.087058
   46        0.075514       0.214454       0.097683       0.100197       0.271148       0.172155       0.186736
   47        0.105561       0.157661       0.059621       0.063287       0.133933       0.114181       0.133196
   48        0.285380       0.072068       0.129958       0.096778       0.078418       0.063133       0.055028
   49        0.179905       0.136089       0.083699       0.056260       0.096405       0.085126       0.092251
   50        0.107146       0.082955       0.062244       0.046557       0.154648       0.080636       0.086319
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EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX      ALL VARIABLES

                  1             2             3             4             5             6             7

   51         0.116279      0.112352      0.082078      0.054751      0.121093      0.095246      0.106071
   52         0.052512      0.096142      0.052691      0.042928      0.009713      0.053978      0.059247
   53         0.124327      0.132434      0.070459      0.054360      0.067300      0.072537      0.078832
   54         0.284961      0.083562      0.187541      0.045726      0.030024      0.052701      0.055046
   55         0.202977      0.080725      0.188041      0.061920      0.018638      0.062187      0.071823
   56         0.117321      0.199601      0.091655      0.086836      0.162813      0.147100      0.155753
   57         0.159560      0.183451      0.077671      0.133392      0.081735      0.131432      0.161145
   58         0.067422      0.275119      0.087514      0.146422      0.355420      0.197845      0.222498
   59        -0.031722      0.313344      0.092800      0.167675      0.448531      0.269377      0.310113
   60         0.024876      0.330074      0.089261      0.193620      0.434691      0.265461      0.308450
   61         0.122555      0.328484      0.089641      0.154315      0.369287      0.222457      0.258187
   62        -0.017915      0.286364      0.088216      0.114439      0.373691      0.208378      0.241631
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EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX       ALL VARIABLES

                     8            9            10           11           12           13           14

     1          0.072123     0.067766     0.095078     0.122927     0.116464     0.077713     0.120866
     2          0.147116     0.228897     0.086693     0.087112     0.158182     0.168799     0.184581
     3          0.090223     0.109236     0.145275     0.133066     0.113562     0.102558     0.113903
     4          0.150582     0.133695    -0.009391     0.051605     0.112151     0.046669     0.051227
     5          0.212446     0.182530     0.134785     0.101097     0.210856     0.270294     0.184435
     6          0.275128     0.212964     0.068973     0.086995     0.018611     0.087103     0.097190
     7          0.609849     0.424993     0.054650     0.079563     0.054782     0.167937     0.121569
     8          1.000000     0.649378     0.064012     0.063897     0.083664     0.152824     0.129361
     9          0.649376     1.000000     0.059817     0.070993     0.138140     0.177748     0.148395
    10          0.064012     0.059817     1.000000     0.134120     0.084503     0.051766     0.041120
    11          0.063897     0.070998     0.134120     1.000000     0.097421     0.035154     0.048092
    12          0.083661     0.138140     0.084497     0.097421     1.000000     0.210211     0.140818
    13          0.152824     0.177751     0.051766     0.035160     0.210214     1.000000     0.410048
    14          0.129361     0.148395     0.041120     0.048092     0.140823     0.410048     1.000000
    15          0.178494     0.211283     0.047295     0.079549     0.222972     0,233970     0.106345
    16          0.229774     0.270314     0.080279     0.112124     0.253061     0.177635     0.096077
    17          0.237730     0.281588     0.105734     0.128598     0.249630     0.142491     0.117416
    18          0.187200     0.201646     0.081628     0.031161     0.187485     0.539208     0.216486
    19          0.064300     0.050913     0.082460     0.094325     0.108740     0.163927     0.052264
    20          0.121444     0.152044     0.085401     0.091413     0.127182     0.096717     0.120373
    21          0.133577     0.165980     0.099782     0.091416     0.147080     0.183216     0.106841
    22          0.147513     0.146059     0.076981     0.077273     0.109411     0.093241     0.112336
    23          0.201074     0.245966     0.053532     0.086287     0.190249     0.169364     0.113958
    24          0.182086     0.242432     0.051074     0.093101     0.168511     0.109835     0.141607
    25          0.114825     0.124826     0.079188     0.088349     0.122328     0.111284     0.094459
    26          0.131611     0.161336     0.118473     0.113572     0.163449     0.101645     0.115883
    27          0.130283     0.147901     0.053196     0.047367     0.192648     0.139172     0.128555
    28          0.127763     0.156242     0.074966     0.067571     0.197001     0.129892     0.137722
    29          0.146687     0.157522    -0.035188     0.086899     0.133138     0.059982     0.068899
    30          0.051121     0.080606     0.115808     0.089961     0.108745     0.148882     0.113413
    31          0.036985     0.055568     0.054655     0.029440     0.087275     0.121432     0.085025
    32          0.195370     0.252505     0.055406     0.114106     0.178822     0.106295     0.109685
    33          0.163502     0.230549     0.031573     0.097883     0.156751     0.087612     0.086721
    34          0.073172     0.096500    -0.004057     0.065745     0.086019     0.033391     0.062792
    35          0.094128     0.113358     0.034534     0.065289     0.119400     0.108326     0.077183
    36          0.110318     0.148746     0.074746     0.078595     0.103681     0.085010     0.111716
    37          0.109021     0.151882     0.089731     0.091122     0.113797     0.100634     0.096542
    38          0.106280     0.116811     0.091383     0.067742     0.119450     0.106934     0.123202
    39          0.114744     0.156539     0.137519     0.069761     0.100817     0.155194     0.174076
    40         -0.016264     0.015254    -0.045607     0.044009     0.057653    -0.007359    -0.013000
    41          0.074005     0.070397     0.082479     0.008968     0.048190     0.067062     0.068060
    42          0.081196     0.102897     0.028292     0.076296     0.095355     0.071069     0.085792
    43          0.110433     0.163015     0.062316     0.095252     0.126081     0.102780     0.084698
    44          0.073636     0.113239     0.035625     0.056404     0.064166     0.042294     0.039016
    45          0.052544     0.080702     0.030314     0.055257     0.092401     0.038028     0.017742
    46          0.161518     0.184869     0.089379     0.083480     0.149525     0.125460     0.121130
    47          0.116207     0.139226     0.074334     0.034830     0.110961     0.110703     0.086656
    48          0.061554     0.051297     0.088856     0.097413     0.085337     0.046016     0.067529
    49          0.097237     0.104687     0.046103     0.053850     0.092491     0.074915     0.064370
    50          0.063667     0.060954     0.074837     0.044204     0.068290     0.068839     0.053959
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EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX      ALL VARIABLES

                      8           9           10          11          12          13          14

    51            0.089749    0.095209    0.070662    0.065316    0.077115    0.097122    0.063998
    52            0.062102    0.072457    0.022497    0.013529    0.045115    0.040623    0.053279
    53            0.086694    0.099427    0.047087    0.040811    0.080734    0.055765    0.052116
    54            0.065811    0.083080    0.092286    0.077193    0.081668    0.072689    0.072738
    55            0.082048    0.084850    0.082620    0.067412    0.099144    0.062939    0.119745
    56            0.132654    0.156026    0.096415    0.077655    0.146764    0.116460    0.114800
    57            0.143102    0.177744    0.047119    0.095885    0.133487    0.066191    0.085553
    58            0.178110    0.231951    0.062053    0.088400    0.217412    0.196559    0.175232
    59            0.260648    0.291457    0.126355    0.120258    0.235313    0.221370    0.164768
    60            0.250299    0.288556    0.105610    0.116548    0.228265    0.204107    0.159846
    61            0.216977    0.248478    0.110845    0.101843    0.201067    0.190275    0.166770
    62            0.193134    0.235137    0.108087    0.096058    0.189758    0.209637    0.159371
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EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX      ALL VARIABLES

                 15           16           17           18           19           20           21

  1          0.030739     0.053361     0.049840     0.037674     0.273621     0.025633     0.066550
  2          0.167975     0.203129     0.220023     0.164686     0.053567     0.181517     0.171429
  3          0.052422     0.067573     0.075972     0.136594     0.194026     0.094177     0.120432
  4          0.183267     0.195769     0.180525     0.063700     0.063513     0.060284     0.079130
  5          0.294104     0.243489     0.222997     0.243437     0.132058     0.079315     0.108645
  6          0.194278     0.186210     0.194669     0.104140    -0.022359     0.131804     0.129893
  7          0.225702     0.246066     0.264061     0.175786     0.004785     0.130405     0.146274
  8          0.178496     0.229772     0.237730     0.187204     0.064300     0.121447     0.133577
  9          0.211283     0.270314     0.281587     0.201646     0.050913     0.152044     0.165980
 10          0.047296     0.080275     0.105734     0.081628     0.082460     0.085401     0.099782
 11          0.079549     0.112124     0.128598     0.031168     0.094325     0.091413     0.091416
 12          0.222972     0.253059     0.249628     0.187485     0.108740     0.127182     0.147080
 13          0.233972     0.177635     0.142493     0.539212     0.163940     0.096721     0.183220
 14          0.106345     0.096074     0.117413     0.216486     0.052264     0.120373     0.106841
 15          1.000000     0.441949     0.335643     0.284929     0.072743     0.172502     0.223212
 16          0.441951     1.000000     0.574836     0.215576     0.076145     0.199705     0.236702
 17          0.335643     0.574836     1.000000     0.153288    -0.008951     0.200944     0.187448
 18          0.284929     0.215573     0.153288     1.000000     0.169554     0.126978     0.188794
 19          0.072743     0.076137    -0.008958     0.169554     1.000000     0.021597     0.071135
 20          0.172502     0.199703     0.200944     0.126978     0.021597     1.000000     0.709453
 21          0.223212     0.236700     0.187448     0.188794     0.071135     0.709453     1.000000
 22          0.123032     0.168639     0.169397     0.109912     0.109482     0.224425     0.265121
 23          0.281635     0.368127     0.335662     0.165631     0.030563     0.297727     0.339273
 24          0.238955     0.318736     0.329127     0.122629     0.008879     0.334371     0.296286
 25          0.153280     0.198860     0.198977     0.115283     0.123443     0.147540     0.162105
 26          0.178056     0.242323     0.251470     0.139495     0.073707     0.208788     0.206332
 27          0.159218     0.156331     0.178587     0.179568     0.040166     0.117802     0.130816
 28          0.190419     0.218823     0.231654     0.145306     0.049773     0.153571     0.162710
 29          0.166246     0.218509     0.227116     0.070989     0.090604     0.059409     0.063998
 30          0.037924     0.042244     0.075589     0.114097     0.223788     0.072267     0.086453
 31          0.031066     0.029272     0.049424     0.082800     0.138348     0.050307     0.077123
 32          0.254617     0.334296     0.308673     0.130959     0.013604     0.302949     0.271801
 33          0.249533     0.333965     0.307037     0.100796     0.003475     0.287213     0.272000
 34          0.078724     0.140503     0.130814     0.030901     0.049420     0.126301     0.140154
 35          0.126349     0.151609     0.131694     0.107100     0.085034     0.113769     0.124458
 36          0.120496     0.145594     0.137990     0.097621     0.032561     0.207636     0.192060
 37          0.132249     0.163173     0.149363     0.122458     0.054900     0.508744     0.459328
 38          0.099377     0.102642     0.108867     0.098176     0.122643     0.102322     0.112519
 39          0.079471     0.070778     0.074667     0.159033     0.148049     0.126422     0.142933
 40          0.074139     0.124695     0.113851    -0.013718    -0.050532     0.082791     0.082873
 41          0.030294     0.034936     0.040937     0.055712     0.202755     0.042992     0.073236
 42          0.091006     0.126205     0.115472     0.101508     0.092542     0.158873     0.166853
 43          0.189199     0.227359     0.228815     0.101897     0.043483     0.272298     0.264347
 44          0.076628     0.096029     0.104695     0.042387     0.037345     0.277168     0.262382
 45          0.130944     0.142255     0.149780     0.034798     0.036046     0.111648     0.109282
 46          0.191725     0.200174     0.185113     0.148080     0.059478     0.181606     0.178040
 47          0.146525     0.162364     0.152235     0.104600     0.077352     0.135403     0.129676
 48          0.073855     0.089438     0.079670     0.027351     0.197321     0.062598     0.060473
 49          0.104717     0.125820     0.129736     0.074920     0.071405     0.116829     0.119810
 50          0.100610     0.084683     0.090358     0.067437     0.074091     0.023673     0.024876
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EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX      ALL VARIABLES

                    15          16          17          18          19          20          21

   51         0.105514    0.117581    0.104824    0.086025    0.105896    0.116752    0.112128
   52         0.085830    0.114424    0.117767    0.042233    0.062494    0.134506    0.121541
   53         0.104683    0.137843    0.131871    0.067913    0.061780    0.136593    0.123190
   54         0.066599    0.066874    0.073838    0.079602    0.235819    0.117784    0.151368
   55         0.073871    0.104092    0.102000    0.043534    0.188728    0.165921    0.154757
   56         0.175310    0.193199    0.200408    0.134988    0.062194    0.196461    0.181513
   57         0.216319    0.220436    0.224933    0.078474    0.032345    0.189862    0.185527
   58         0.253099    0.257580    0.257199    0.194262    0.036704    0.186629    0.189750
   59         0.346821    0.364791    0.360631    0.221548    0.048717    0.250100    0.244417
   60         0.360447    0.380847    0.370261    0.202230    0.041697    0.250550    0.246766
   61         0.291592    0.295668    0.296265    0.181597    0.041835    0.224608    0.214415
   62         0.296209    0.296478    0.290028    0.203988    0.041006    0.242977    0.234543
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EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX   ALL VARIABLES

	22	23	24	25	26	27	28
1	0.188289	-0.022323	-0.027660	0.186619	0.180838	0.057947	0.072443
2	0.107192	0.230300	0.238579	0.135985	0.177804	0.145369	0.156323
3	0.131168	0.069315	0.075598	0.107813	0.108846	0.069599	0.103099
4	0.073853	0.151838	0.128660	0.064628	0.079608	0.092010	0.098721
5	0.041780	0.100228	0.064825	0.023139	0.111636	0.219946	0.195064
6	0.125735	0.167740	0.160797	0.065975	0.127273	0.126030	0.118047
7	0.151031	0.222517	0.199712	0.096988	0.138307	0.153711	0.156364
8	0.147513	0.201074	0.182086	0.114831	0.131611	0.130283	0.127763
9	0.146059	0.245966	0.242432	0.124826	0.161336	0.147899	0.156242
10	0.076981	0.053532	0.051074	0.079200	0.118466	0.053196	0.074961
11	0.077273	0.086292	0.093101	0.088361	0.113572	0.047367	0.067571
12	0.109411	0.190249	0.168508	0.122328	0.163449	0.192646	0.196999
13	0.093241	0.169367	0.109835	0.111291	0.101648	0.139172	0.129892
14	0.112336	0.113961	0.141603	0.094459	0.115878	0.128555	0.137722
15	0.123032	0.281637	0.238955	0.153280	0.178056	0.159216	0.190419
16	0.168639	0.368129	0.318736	0.198864	0.242323	0.156331	0.218823
17	0.169403	0.335663	0.329127	0.198981	0.251470	0.178587	0.231654
18	0.109903	0.165634	0.122629	0.115283	0.139492	0.179568	0.145303
19	0.109482	0.030563	0.008871	0.123463	0.073696	0.040166	0.049765
20	0.224417	0.297729	0.334371	0.147546	0.208785	0.117802	0.153571
21	0.265121	0.339273	0.296284	0.162105	0.206329	0.130816	0.162710
22	1.000000	0.232501	0.227616	0.183304	0.277323	0.068880	0.142874
23	0.232501	1.000000	0.825380	0.177869	0.239349	0.141728	0.195353
24	0.227616	0.825381	1.000000	0.187263	0.247963	0.142244	0.190673
25	0.183304	0.177869	0.187259	1.000000	0.206141	0.085283	0.141180
26	0.277323	0.239351	0.247963	0.206148	1.000000	0.115627	0.186163
27	0.068880	0.141728	0.142244	0.085283	0.115627	1.000000	0.857828
28	0.142874	0.195353	0.190673	0.141180	0.186163	0.857829	1.000000
29	0.096217	0.161053	0.139668	0.108468	0.103030	0.130325	0.125720
30	0.150139	0.077943	0.079270	0.169637	0.126830	0.062506	0.091141
31	0.079001	0.062666	0.069316	0.127739	0.076681	0.060637	0.090782
32	0.207378	0.639231	0.653872	0.173098	0.227453	0.138437	0.198712
33	0.221479	0.568791	0.571276	0.191196	0.225964	0.105518	0.181691
34	0.176363	0.156386	0.158754	0.163084	0.214242	0.014959	0.111859
35	0.111500	0.123325	0.124671	0.113979	0.129529	0.092069	0.109027
36	0.187441	0.255240	0.258682	0.131441	0.223844	0.099331	0.142727
37	0.206399	0.283236	0.311411	0.146842	0.206213	0.075722	0.136739
38	0.189264	0.107508	0.118181	0.095457	0.161069	0.100608	0.125096
39	0.203513	0.129749	0.130046	0.132745	0.136819	0.100145	0.116666
40	0.070392	0.132644	0.128326	0.120295	0.104179	0.092694	0.114156
41	0.116805	0.067462	0.061985	0.101485	0.080313	0.012833	0.044881
42	0.163467	0.159122	0.172018	0.129334	0.171665	0.071986	0.118594
43	0.151954	0.306077	0.310945	0.182945	0.192498	0.081774	0.136549
44	0.112966	0.171764	0.189072	0.108188	0.116542	0.071865	0.104695
45	0.051361	0.136604	0.145774	0.088963	0.088852	0.057385	0.073293
46	0.092272	0.206997	0.208759	0.075738	0.155687	0.169459	0.167535
47	0.117514	0.183219	0.184658	0.107927	0.164363	0.085744	0.109449
48	0.102441	0.070429	0.063005	0.099677	0.072684	0.032602	0.062092
49	0.102150	0.156082	0.157756	0.099734	0.141134	0.064885	0.082064
50	-0.012463	0.045972	0.035724	0.042358	0.049197	0.037193	0.032665

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EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX      ALL VARIABLES

                  22          23          24          25          26          27          28

   51       0.122920    0.135855    0.140376    0.088898    0.126997    0.099164    0.109760
   52       0.103622    0.166839    0.183710    0.091448    0.119996    0.032089    0.086466
   53       0.090539    0.156108    0.166249    0.105421    0.124836    0.056757    0.078274
   54       0.198196    0.114527    0.125763    0.162344    0.158316    0.047619    0.106290
   55       0.151539    0.122678    0.131738    0.146186    0.150341    0.082968    0.110243
   56       0.147233    0.215398    0.234000    0.116398    0.209020    0.136397    0.154317
   57       0.145813    0.325967    0.332938    0.132873    0.187118    0.109549    0.165594
   58       0.056616    0.243718    0.236809    0.080039    0.153573    0.226845    0.227748
   59       0.086826    0.356717    0.345750    0.127655    0.225677    0.245080    0.265579
   60       0.087591    0.356406    0.342832    0.134370    0.218334    0.198209    0.218129
   61       0.078160    0.290144    0.285939    0.121981    0.212583    0.207510    0.223153
   62       0.067606    0.294362    0.293344    0.113700    0.166040    0.202228    0.211094
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EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX      ALL VARIABLES
                29            30            31            32            33            34            35

  1        0.128923      0.272498      0.156227     -0.000254      0.013434      0.190101      0.083671
  2        0.130374      0.146601      0.111147      0.266227      0.232544      0.106999      0.093289
  3        0.084729      0.191502      0.104188      0.063485      0.048535      0.071704      0.076909
  4        0.287710     -0.007035     -0.007471      0.150038      0.132319      0.043843      0.071915
  5        0.086530      0.087995      0.072180      0.078038      0.003628      0.005784      0.184965
  6        0.116704      0.085446      0.067136      0.159247      0.141111      0.028057      0.110607
  7        0.149604      0.107979      0.090111      0.209339      0.185853      0.045101      0.122506
  8        0.146687      0.051121      0.036985      0.195370      0.163602      0.073172      0.094131
  9        0.157518      0.080598      0.055568      0.252503      0.230547      0.096500      0.113358
 10       -0.035188      0.115808      0.054655      0.055406      0.031573     -0.004057      0.034534
 11        0.086899      0.089961      0.029440      0.114106      0.097883      0.065745      0.065296
 12        0.133138      0.108745      0.087266      0.178822      0.156751      0.086019      0.119400
 13        0.059982      0.148893      0.121442      0.106295      0.087612      0.033397      0.108330
 14        0.068893      0.113413      0.085025      0.109685      0.086721      0.062792      0.077183
 15        0.166246      0.037917      0.031066      0.254617      0.249533      0.078724      0.126352
 16        0.218512      0.042244      0.029272      0.334296      0.333967      0.140503      0.151611
 17        0.227116      0.075589      0.049424      0.308673      0.307037      0.130814      0.131697
 18        0.070984      0.114097      0.082790      0.130957      0.100796      0.030895      0.107100
 19        0.090588      0.223788      0.138348      0.013604      0.003475      0.049420      0.085048
 20        0.059409      0.072267      0.050307      0.302949      0.287213      0.126301      0.113769
 21        0.063998      0.086453      0.077120      0.271801      0.271998      0.140149      0.124458
 22        0.096217      0.150139      0.079001      0.207378      0.221479      0.176363      0.111510
 23        0.161053      0.077937      0.062666      0.639231      0.568789      0.156386      0.123315
 24        0.139668      0.079276      0.069316      0.653872      0.571276      0.158754      0.124674
 25        0.108468      0.169637      0.127723      0.173094      0.191191      0.163075      0.113979
 26        0.103030      0.126839      0.076681      0.227453      0.225964      0.214242      0.129529
 27        0.130323      0.062506      0.060637      0.138437      0.105518      0.014959      0.092069
 28        0.125720      0.091148      0.090782      0.198712      0.181691      0.111859      0.109027
 29        1.000000      0.034587      0.037346      0.153078      0.163338      0.057846      0.082448
 30        0.034587      1.000000      0.468260      0.066601      0.081497      0.054127      0.094034
 31        0.037346      0.468260      1.000000      0.081280      0.065484      0.035536      0.067460
 32        0.153078      0.066601      0.081280      1.000000      0.682605      0.208777      0.139106
 33        0.163334      0.081497      0.065484      0.682605      1.000000      0.207638      0.122190
 34        0.057839      0.054127      0.035536      0.208777      0.207638      1.000000      0.096556
 35        0.082443      0.094034      0.067460      0.139106      0.122187      0.096550      1.000000
 36        0.052103      0.094146      0.095578      0.355934      0.324945      0.216543      0.116959
 37        0.035870      0.110803      0.077371      0.354385      0.341429      0.169178      0.122245
 38        0.068179      0.109992      0.087409      0.135509      0.116624      0.148549      0.181146
 39        0.042317      0.201087      0.148285      0.167073      0.148666      0.118558      0.107477
 40        0.063327      0.000715     -0.017382      0.131339      0.174551      0.116409      0.03544
 41        0.076439      0.197858      0.115558      0.054654      0.061857      0.041242      0.044161
 42        0.058695      0.135995      0.079012      0.162463      0.190949      0.106289      0.078283
 43        0.106060      0.083258      0.052394      0.348625      0.350531      0.176919      0.103905
 44        0.037360      0.081856      0.033854      0.190392      0.205017      0.101627      0.043664
 45        0.078017      0.043402      0.022860      0.162420      0.146050      0.095471      0.055121
 46        0.097073      0.075308      0.089381      0.247547      0.183099      0.094724      0.152838
 47        0.074847      0.084660      0.076556      0.230460      0.205354      0.108819      0.105363
 48        0.077021      0.161469      0.088059      0.067947      0.057445      0.047908      0.076086
 49        0.046981      0.096963      0.061419      0.167317      0.158886      0.098400      0.072451
 50        0.020259      0.051802      0.039185      0.051702      0.024990      0.021142      0.042824
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EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX ALL VARIABLES

	29	30	31	32	33	34	35
51	0.037207	0.095388	0.063650	0.161678	0.157190	0.082533	0.093919
52	0.043488	0.054752	0.039608	0.201540	0.201766	0.125385	0.064788
53	0.043074	0.059502	0.047696	0.203383	0.193663	0.138735	0.066676
54	0.085157	0.214909	0.097539	0.123342	0.136759	0.127014	0.099606
55	0.081583	0.161618	0.110418	0.137542	0.140873	0.107162	0.073944
56	0.074799	0.086822	0.087366	0.258813	0.232045	0.126494	0.117330
57	0.129813	0.064073	0.072505	0.413528	0.391435	0.179485	0.107002
58	0.168047	0.037952	0.059655	0.273919	0.203883	0.081718	0.153607
59	0.163959	0.073393	0.085475	0.390710	0.314071	0.148282	0.193489
60	0.175441	0.060299	0.072649	0.391397	0.322002	0.181235	0.193110
61	0.129288	0.070810	0.078327	0.337280	0.267609	0.164390	0.173989
62	0.127131	0.081837	0.079489	0.341220	0.274562	0.099606	0.186719

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EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX       ALL VARIABLES
                    36           37           38           39           40           41           42

      1        0.145349     0.099646     0.211875     0.266307    -0.057003     0.420738     0.172608
      2        0.194211     0.196660     0.124006     0.174831     0.014577     0.095163     0.099005
      3        0.079713     0.102731     0.116044     0.167954    -0.015017     0.141354     0.104822
      4        0.061539     0.034382     0.066366     0.017181     0.017529     0.067329     0.040359
      5        0.080630     0.045083     0.140820     0.060394    -0.066860     0.029181     0.032101
      6        0.101949     0.099371     0.097826     0.083640     0.001033     0.081604     0.069332
      7        0.115746     0.113795     0.104857     0.105874    -0.011645     0.100373     0.085575
      8        0.110322     0.109018     0.106280     0.114744    -0.016264     0.074005     0.081196
      9        0.148746     0.151880     0.116811     0.156539     0.015254     0.070397     0.102891
     10        0.074753     0.089726     0.091383     0.137519    -0.045607     0.082479     0.028292
     11        0.078601     0.091122     0.067752     0.069771     0.044009     0.008968     0.076296
     12        0.103681     0.113794     0.119450     0.100817     0.057653     0.048180     0.095348
     13        0.085014     0.100634     0.106939     0.155200    -0.007359     0.067062     0.071077
     14        0.111721     0.096542     0.123209     0.174076    -0.013000     0.068045     0.085783
     15        0.120496     0.132247     0.099377     0.079471     0.074139     0.030294     0.091006
     16        0.145596     0.163173     0.102646     0.070781     0.124695     0.034936     0.126205
     17        0.137992     0.149361     0.108871     0.074667     0.113851     0.040937     0.115472
     18        0.097621     0.122455     0.098176     0.159033    -0.013718     0.055701     0.101501
     19        0.032561     0.054890     0.122643     0.148069    -0.050532     0.202755     0.092542
     20        0.207636     0.508741     0.102326     0.126422     0.082792     0.042992     0.158873
     21        0.192064     0.459328     0.112519     0.142939     0.082873     0.073236     0.166847
     22        0.187449     0.206399     0.189277     0.203527     0.070393     0.116805     0.163467
     23        0.255240     0.283234     0.107508     0.129749     0.132644     0.067454     0.159118
     24        0.258685     0.311411     0.118185     0.130050     0.128326     0.061985     0.172018
     25        0.131441     0.146837     0.095457     0.132745     0.120295     0.101466     0.129322
     26        0.223848     0.206213     0.161075     0.136819     0.104179     0.080313     0.171658
     27        0.099333     0.075722     0.100611     0.100145     0.092694     0.012833     0.071986
     28        0.142727     0.136739     0.125096     0.116666     0.114156     0.044881     0.118594
     29        0.052107     0.035870     0.068179     0.042325     0.063327     0.076439     0.058695
     30        0.094155     0.110795     0.110007     0.201103     0.000715     0.197858     0.135995
     31        0.095578     0.077371     0.087423     0.148300    -0.017382     0.115558     0.078994
     32        0.355934     0.354385     0.135512     0.167077     0.131339     0.054648     0.162463
     33        0.324945     0.341427     0.116628     0.148670     0.174551     0.061857     0.190949
     34        0.216548     0.169178     0.148557     0.118558     0.116409     0.041242     0.106279
     35        0.116969     0.122221     0.181146     0.107470     0.035441     0.044149     0.078275
     36        1.000000     0.339448     0.219470     0.274084     0.043415     0.067910     0.169358
     37        0.339451     1.000000     0.174026     0.249655     0.076328     0.076577     0.197040
     38        0.219470     0.174022     1.000000     0.209671    -0.006079     0.102368     0.147703
     39        0.274084     0.249650     0.209680     1.000000    -0.040684     0.176862     0.194482
     40        0.043415     0.076328    -0.006079    -0.040684     1.000000    -0.093493     0.113512
     41        0.067921     0.076577     0.102385     0.176862    -0.093493     1.000000     0.083580
     42        0.169358     0.197034     0.147713     0.194493     0.113512     0.083580     1.000000
     43        0.217872     0.319311     0.075929     0.103587     0.157172     0.071482     0.251701
     44        0.129744     0.293106     0.051985     0.094701     0.085903     0.093218     0.166855
     45        0.094927     0.106876     0.020398     0.005728     0.028672     0.040676     0.038484
     46        0.219092     0.187172     0.142066     0.120739    -0.033414     0.059366     0.070953
     47        0.200589     0.176954     0.098437     0.126960     0.022904     0.070285     0.128270
     48        0.044797     0.044437     0.093777     0.079234    -0.014143     0.190970     0.080261
     49        0.161662     0.139494     0.103666     0.109213     0.005194     0.100189     0.106599
     50        0.010931     0.012312     0.032173     0.025909    -0.044901     0.055922     0.024485
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EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX      ALL VARIABLES
                   36             37             38             39             40             41             42

   51          0.162804       0.126569       0.096634       0.135784       0.023394       0.066460       0.122281
   52          0.158600       0.188752       0.056616       0.069826       0.031435       0.058358       0.090074
   53          0.179172       0.180746       0.073362       0.096696       0.030412       0.080438       0.108785
   54          0.180294       0.186764       0.165811       0.247253       0.029310       0.194133       0.199202
   55          0.126796       0.189468       0.103793       0.165467       0.084751       0.134692       0.208085
   56          0.239558       0.232880       0.149593       0.137046       0.023579       0.069604       0.165504
   57          0.244873       0.229121       0.100149       0.100328       0.084571       0.091471       0.127414
   58          0.209523       0.191722       0.142148       0.110846      -0.002171       0.057773       0.095366
   59          0.238217       0.244455       0.130204       0.121808       0.004917       0.035072       0.095135
   60          0.228991       0.236599       0.119575       0.089801       0.008439       0.054923       0.089318
   61          0.254891       0.245138       0.154694       0.142842      -0.022039       0.087546       0.101740
   62          0.221229       0.247502       0.126602       0.127767       0.001703       0.045735       0.099070
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EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX ALL VARIABLES

	43	44	45	46	47	48	49
1	0.051514	0.079852	0.065959	0.075514	0.105546	0.285420	0.179905
2	0.202217	0.124756	0.098133	0.214454	0.157661	0.072068	0.136086
3	0.056109	0.093695	0.036745	0.097683	0.059621	0.129976	0.083699
4	0.077952	0.040145	0.065382	0.100195	0.063283	0.096778	0.056260
5	0.039032	0.006540	0.100917	0.271147	0.133933	0.078422	0.096405
6	0.107415	0.056200	0.079700	0.172153	0.114178	0.063133	0.085126
7	0.138308	0.065656	0.087055	0.186735	0.133194	0.055028	0.092251
8	0.110433	0.073636	0.052544	0.161518	0.116210	0.061554	0.097237
9	0.163015	0.113235	0.080702	0.184867	0.139226	0.051297	0.104687
10	0.062316	0.035625	0.030314	0.089376	0.074334	0.088856	0.046103
11	0.095252	0.056396	0.055257	0.083477	0.034830	0.097427	0.053850
12	0.126079	0.064161	0.092398	0.149523	0.110961	0.085337	0.092491
13	0.102783	0.042299	0.038028	0.125460	0.110703	0.046024	0.074920
14	0.084698	0.039006	0.017742	0.121127	0.086652	0.067529	0.064364
15	0.189199	0.076628	0.130944	0.191725	0.146525	0.073860	0.104717
16	0.227359	0.096029	0.142255	0.200174	0.162364	0.089438	0.125823
17	0.278817	0.104695	0.149780	0.185113	0.152235	0.079670	0.129736
18	0.101895	0.042387	0.034794	0.148078	0.104600	0.027351	0.074916
19	0.043483	0.037345	0.036034	0.059478	0.077343	0.197321	0.071405
20	0.272298	0.277168	0.111648	0.181605	0.135403	0.062598	0.116829
21	0.264347	0.262382	0.109279	0.178038	0.129676	0.060473	0.119810
22	0.151954	0.112966	0.051361	0.092272	0.117514	0.102460	0.102140
23	0.306077	0.171761	0.136602	0.206997	0.183219	0.070429	0.156080
24	0.310945	0.189072	0.145774	0.208759	0.184658	0.063005	0.157756
25	0.182945	0.108179	0.088957	0.075734	0.107927	0.099677	0.099734
26	0.192498	0.116542	0.088856	0.155687	0.164363	0.072684	0.141134
27	0.081774	0.071855	0.057385	0.169459	0.085744	0.032602	0.064885
28	0.136549	0.104695	0.073293	0.167535	0.109449	0.062092	0.082064
29	0.106060	0.037360	0.078021	0.097073	0.074847	0.077032	0.046987
30	0.083258	0.081856	0.043402	0.075308	0.084560	0.161469	0.096963
31	0.052394	0.033854	0.022860	0.089381	0.076556	0.088059	0.061419
32	0.348625	0.190392	0.162422	0.247545	0.230460	0.067947	0.167317
33	0.350331	0.205012	0.146050	0.183099	0.205354	0.057445	0.158886
34	0.176919	0.101627	0.095471	0.094724	0.108819	0.047908	0.098400
35	0.103900	0.043658	0.055118	0.152836	0.105360	0.076088	0.072446
36	0.217872	0.129744	0.094924	0.219090	0.200586	0.044797	0.161659
37	0.319311	0.293106	0.106876	0.187172	0.176954	0.044444	0.139494
38	0.075926	0.051978	0.020392	0.142063	0.098437	0.093784	0.103666
39	0.103584	0.094694	0.005728	0.120735	0.126960	0.079234	0.109213
40	0.157172	0.085903	0.028672	-0.035414	0.022904	-0.014143	0.005194
41	0.071490	0.093218	0.040676	0.059366	0.070294	0.190970	0.100189
42	0.251701	0.166855	0.038490	0.070953	0.128270	0.080261	0.106599
43	1.000000	0.280602	0.151087	0.143937	0.203276	0.050968	0.162125
44	0.280602	1.000000	0.083457	0.100495	0.106565	0.050782	0.091976
45	0.151087	0.083457	1.000000	0.148401	0.129698	0.075640	0.102163
46	0.143938	0.100495	0.148401	1.000000	0.255483	0.104945	0.193065
47	0.203276	0.106565	0.129698	0.255483	1.000000	0.037087	0.250042
48	0.050968	0.050770	0.075632	0.104945	0.037081	1.000000	0.080028
49	0.162125	0.091976	0.102163	0.193065	0.250042	0.080038	1.000000
50	0.084478	0.029590	0.071097	0.122220	0.109531	0.171635	0.107267

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EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX      ALL VARIABLES

                    43            44            45            46            47            48            49

  51            0.136624      0.088509      0.104175      0.202074      0.252367      0.092040      0.189906
  52            0.249688      0.113027      0.132711      0.150440      0.241090      0.035396      0.177208
  53            0.235552      0.121701      0.136731      0.193878      0.264189      0.073338      0.209624
  54            0.153724      0.115043      0.058118      0.100446      0.130502      0.139219      0.109087
  55            0.212592      0.138461      0.085824      0.076488      0.119869      0.151061      0.117450
  56            0.243279      0.117832      0.156237      0.305644      0.319898      0.071445      0.262019
  57            0.275069      0.139199      0.153843      0.216185      0.182171      0.067879      0.166289
  58            0.224024      0.122317      0.139456      0.356237      0.216363      0.070880      0.143016
  59            0.335384      0.160352      0.243204      0.420095      0.276606      0.088241      0.194460
  60            0.353202      0.167898      0.275817      0.430678      0.293585      0.103865      0.208745
  61            0.295384      0.147345      0.225315      0.416500      0.278933      0.081753      0.211596
  62            0.320692      0.158013      0.192076      0.373465      0.253004      0.070364      0.175918
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EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX ALL VARIABLES

	50	51	52	53	54	55	56
1	0.107146	0.116279	0.052512	0.124327	0.284961	0.202977	0.117321
2	0.082955	0.112349	0.096142	0.132436	0.083562	0.080719	0.199601
3	0.062244	0.082078	0.052691	0.070466	0.187563	0.188041	0.091655
4	0.046557	0.054746	0.042922	0.054360	0.045726	0.061909	0.086836
5	0.154648	0.121093	0.009713	0.067300	0.030024	0.018634	0.162813
6	0.080636	0.095246	0.053974	0.072537	0.052701	0.062179	0.147100
7	0.086319	0.106068	0.059244	0.078832	0.055038	0.071816	0.155751
8	0.063671	0.089749	0.062102	0.086697	0.065811	0.082048	0.132654
9	0.060954	0.095206	0.072454	0.099427	0.083080	0.084850	0.156026
10	0.074837	0.070662	0.022497	0.047087	0.092268	0.082620	0.096415
11	0.044204	0.065316	0.013529	0.040817	0.077193	0.067398	0.077655
12	0.068290	0.077112	0.045115	0.080734	0.081658	0.099136	0.146762
13	0.068839	0.097122	0.040627	0.055769	0.072689	0.062939	0.116460
14	0.053959	0.065993	0.053279	0.052116	0.072738	0.119745	0.114800
15	0.100610	0.105514	0.085830	0.104685	0.066599	0.073871	0.175310
16	0.084686	0.117581	0.114424	0.137845	0.066874	0.104092	0.193201
17	0.090360	0.104824	0.117767	0.131873	0.073838	0.101994	0.200408
18	0.067433	0.086021	0.042233	0.067913	0.079602	0.043526	0.134986
19	0.074091	0.105896	0.062480	0.061780	0.235819	0.188728	0.062194
20	0.023673	0.116752	0.134506	0.136596	0.117784	0.165913	0.196461
21	0.024876	0.112124	0.121537	0.123190	0.151368	0.154750	0.181513
22	-0.012463	0.122920	0.103622	0.090546	0.198196	0.151519	0.147233
23	0.045970	0.135852	0.166839	0.156108	0.114527	0.122673	0.215398
24	0.035724	0.140373	0.183710	0.166251	0.125763	0.131733	0.234000
25	0.042358	0.088898	0.091441	0.105421	0.162326	0.146171	0.116394
26	0.049197	0.126997	0.119996	0.124840	0.158316	0.150341	0.209020
27	0.037193	0.099164	0.032089	0.056759	0.047619	0.082968	0.136398
28	0.032665	0.109760	0.086466	0.078276	0.106290	0.110243	0.154317
29	0.020259	0.037207	0.043488	0.043074	0.085171	0.081583	0.074799
30	0.051802	0.095377	0.054752	0.059502	0.214909	0.161618	0.086822
31	0.039185	0.063650	0.039608	0.047704	0.097565	0.110418	0.087366
32	0.051702	0.161678	0.201538	0.203385	0.123342	0.137542	0.258813
33	0.024990	0.157187	0.201763	0.193663	0.136759	0.140867	0.232045
34	0.021148	0.082533	0.125378	0.138740	0.127014	0.107150	0.126494
35	0.042820	0.093914	0.064783	0.066676	0.099595	0.073935	0.117327
36	0.010927	0.162804	0.158600	0.179172	0.180284	0.126788	0.239556
37	0.012315	0.126569	0.188752	0.180749	0.186764	0.189468	0.232880
38	0.032173	0.096628	0.056610	0.073362	0.165796	0.103780	0.149589
39	0.025909	0.135777	0.069826	0.096696	0.247253	0.165454	0.137046
40	-0.044901	0.023394	0.031435	0.030412	0.029309	0.084751	0.023579
41	0.055934	0.066460	0.058358	0.080448	0.194133	0.134692	0.069612
42	0.024485	0.122281	0.090074	0.108785	0.199221	0.208085	0.165504
43	0.084478	0.136621	0.249688	0.235554	0.153724	0.212587	0.243279
44	0.029596	0.088509	0.113027	0.121706	0.115043	0.138461	0.117832
45	0.071097	0.104175	0.132711	0.136734	0.058118	0.085824	0.156237
46	0.122220	0.202074	0.150440	0.193880	0.100452	0.076488	0.305644
47	0.109531	0.252367	0.241090	0.264189	0.130502	0.119869	0.319898
48	0.171635	0.092040	0.035386	0.073338	0.139196	0.151042	0.071439
49	0.107267	0.189906	0.177208	0.209628	0.109087	0.117450	0.262019
50	1.000000	0.141987	0.062195	0.094124	-0.017807	0.023545	0.098961

```
EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX       ALL VARIABLES

                     50             51             52             53             54             55             56

    51           0.141991       1.000000       0.206500       0.213384       0.173043       0.151100       0.271038
    52           0.062200       0.206500       1.000000       0.285564       0.125839       0.149904       0.244378
    53           0.094120       0.213381       0.285560       1.000000       0.139549       0.142924       0.242241
    54          -0.017807       0.173031       0.125839       0.139549       1.000000       0.297376       0.156515
    55           0.023545       0.151100       0.149904       0.142932       0.297376       1.000000       0.209321
    56           0.098964       0.271038       0.244378       0.242241       0.156515       0.209321       1.000000
    57           0.056758       0.117507       0.164596       0.167454       0.124220       0.136159       0.211717
    58           0.143153       0.163668       0.118421       0.191213       0.062771       0.056408       0.250668
    59           0.209439       0.194106       0.206664       0.256143       0.068885       0.084545       0.314854
    60           0.226735       0.196634       0.206453       0.262036       0.050097       0.074191       0.325668
    61           0.200323       0.191251       0.186643       0.254912       0.073818       0.064430       0.317485
    62           0.176163       0.183703       0.191919       0.225686       0.082654       0.090240       0.280946
```

EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX   ALL VARIABLES

	57	58	59	60	61	62
1	0.159560	0.067422	-0.031722	0.024873	0.122555	-0.017915
2	0.183451	0.275119	0.313344	0.330073	0.328484	0.286364
3	0.077671	0.087514	0.092800	0.039261	0.089641	0.088217
4	0.133392	0.146422	0.167675	0.193619	0.154315	0.114439
5	0.081735	0.355420	0.448531	0.434691	0.369287	0.373691
6	0.131432	0.197844	0.269377	0.265461	0.222457	0.208378
7	0.161145	0.222498	0.310113	0.308450	0.258186	0.241631
8	0.143102	0.178109	0.260648	0.250299	0.216977	0.193134
9	0.177744	0.231951	0.291457	0.288556	0.248478	0.235137
10	0.047124	0.062051	0.126355	0.105610	0.110845	0.108087
11	0.095890	0.088399	0.120258	0.116548	0.101843	0.096058
12	0.133487	0.217412	0.235313	0.228264	0.201066	0.189758
13	0.066193	0.196559	0.221370	0.204107	0.190276	0.209637
14	0.085553	0.175232	0.164768	0.159846	0.166770	0.159371
15	0.216321	0.253098	0.346821	0.360446	0.291592	0.296209
16	0.220438	0.257580	0.364791	0.380847	0.295668	0.296479
17	0.224934	0.257198	0.360631	0.370261	0.296265	0.290028
18	0.078474	0.194261	0.221548	0.202230	0.181597	0.203988
19	0.032345	0.036704	0.048717	0.041697	0.041835	0.041006
20	0.189862	0.186629	0.250100	0.250550	0.224608	0.242977
21	0.185527	0.189750	0.244417	0.246765	0.214415	0.234543
22	0.145819	0.056616	0.086826	0.087590	0.078160	0.067607
23	0.325967	0.243718	0.356717	0.356406	0.290144	0.294362
24	0.332938	0.236809	0.345750	0.342832	0.285939	0.293344
25	0.132873	0.080037	0.127655	0.134369	0.121981	0.113700
26	0.187118	0.153572	0.225677	0.218333	0.212583	0.166040
27	0.109549	0.226845	0.245080	0.198209	0.207510	0.202228
28	0.165594	0.227748	0.265579	0.218129	0.223153	0.211094
29	0.129813	0.168047	0.163960	0.175440	0.129289	0.127131
30	0.064073	0.037950	0.073393	0.060298	0.070810	0.081837
31	0.072505	0.059653	0.085475	0.072649	0.078329	0.079490
32	0.413528	0.273919	0.390710	0.391397	0.337280	0.341220
33	0.391435	0.203883	0.314071	0.322002	0.267609	0.274562
34	0.179489	0.081718	0.148282	0.181235	0.164390	0.099606
35	0.107002	0.153606	0.193489	0.193109	0.173989	0.186719
36	0.244873	0.209522	0.238217	0.228991	0.254891	0.221229
37	0.229123	0.191722	0.244455	0.236599	0.245138	0.247502
38	0.100149	0.142146	0.130203	0.119575	0.154692	0.126602
39	0.100324	0.110844	0.121807	0.089801	0.142842	0.127767
40	0.084571	-0.002171	0.004917	0.008439	-0.022039	0.001703
41	0.091478	0.057770	0.035073	0.054923	0.087546	0.045737
42	0.127419	0.095366	0.095135	0.089328	0.101740	0.099071
43	0.275070	0.224024	0.335384	0.353202	0.295384	0.320692
44	0.139203	0.122317	0.160352	0.167898	0.147345	0.158013
45	0.153843	0.139456	0.243204	0.275817	0.225315	0.192076
46	0.216185	0.356237	0.420095	0.430678	0.416000	0.373465
47	0.182171	0.216365	0.276606	0.293585	0.278933	0.253004
48	0.067879	0.070878	0.068241	0.103864	0.081753	0.070364
49	0.166289	0.143016	0.194460	0.208745	0.211596	0.175918
50	0.056758	0.143153	0.209439	0.225734	0.200323	0.176164

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EMP-FACTOR ANALYSIS 9TH GRADE

CORRELATION MATRIX       ALL VARIABLES

                       57            58            59            60            61            62

     51             0.117507      0.163667      0.194106      0.196634      0.191252      0.183704
     52             0.164599      0.118421      0.206664      0.206452      0.186644      0.191920
     53             0.167454      0.191213      0.256143      0.262035      0.254912      0.225686
     54             0.124220      0.062768      0.068885      0.050097      0.073818      0.082654
     55             0.136165      0.056408      0.084545      0.074191      0.064430      0.090241
     56             0.211717      0.250667      0.314854      0.325668      0.317485      0.280947
     57             1.000000      0.247238      0.329089      0.351041      0.326756      0.271133
     58             0.247239      1.000000      0.593961      0.604917      0.597976      0.611883
     59             0.329089      0.593961      1.000000      0.841399      0.738046      0.711785
     60             0.351041      0.604917      0.841399      1.000000      0.774725      0.688451
     61             0.326756      0.597976      0.738046      0.774725      1.000000      0.671101
     62             0.271133      0.611883      0.711784      0.688451      0.671101      1.000000
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EMP-FACTOR ANALYSIS 9TH GRADE

VARIMAX FACTORS

                    1            2            3            4            5            6            7

   3         0.078802     0.052675     0.435768    -0.028354    -0.103636     0.008358     0.016612
   4        -0.000210     0.532731     0.185978    -0.011958     0.077396    -0.080011    -0.136669
   7         0.055584     0.530164     0.080709    -0.130878    -0.106611    -0.141350    -0.247141
  10         0.065580     0.065424     0.137311    -0.068874     0.031745    -0.000834    -0.051672
  12         0.023352     0.220697     0.038075    -0.037797    -0.279103    -0.089230     0.262882
  13         0.054387     0.112648     0.069683    -0.059455    -0.838982    -0.033887     0.011646
  14         0.021645     0.004107     0.086243    -0.064049    -0.601143    -0.082101     0.004986
  15         0.096806     0.569593    -0.015990    -0.107841    -0.250046    -0.142831     0.107444
  16         0.072256     0.660529    -0.011881    -0.106619    -0.104154    -0.234717     0.237668
  17         0.046510     0.635903    -0.025395    -0.120791    -0.037743    -0.231524     0.232822
  18         0.092547     0.209268     0.063307    -0.067296    -0.723615    -0.018544    -0.002984
  19        -0.016617    -0.021135     0.568795    -0.024635    -0.203069     0.055600     0.040288
  20         0.832982     0.105026    -0.004356    -0.069974    -0.056758    -0.161109     0.016765
  21         0.807706     0.151293     0.047597    -0.035629    -0.135150    -0.136010     0.024957
  22         0.200377     0.173841     0.246496    -0.024754    -0.007996    -0.139914     0.124577
  23         0.157749     0.212318     0.044292    -0.075771    -0.118645    -0.811768     0.056971
  24         0.168276     0.155517     0.043394    -0.100203    -0.074288    -0.824660     0.061779
  25         0.065247     0.102500     0.226988    -0.039707    -0.088015    -0.122252     0.410371
  26         0.114451     0.220176     0.080085    -0.151591    -0.023430    -0.121155     0.297434
  28         0.055563     0.288550     0.036600    -0.092280    -0.135238    -0.090872     0.231821
  31        -0.043712    -0.132478     0.247282    -0.032022    -0.199361    -0.114034     0.020178
  32         0.141212     0.133751     0.016153    -0.192235    -0.052063    -0.801071     0.062182
  33         0.152731     0.138960     0.037875    -0.176409    -0.014135    -0.742763     0.144671
  34         0.057184    -0.062602     0.017702    -0.118305     0.030887    -0.141278     0.377153
  35         0.067184     0.158087     0.023887    -0.045069    -0.092430    -0.010459     0.037140
  36         0.125342    -0.057979     0.031402    -0.285002    -0.047448    -0.323027    -0.005036
  37         0.641127    -0.039805     0.071517    -0.196658    -0.054587    -0.245662     0.019399
  38         0.018792     0.080161     0.156354    -0.061786    -0.070106    -0.025536    -0.045554
  39         0.066503    -0.060586     0.343251    -0.124212    -0.205327    -0.127104    -0.104497
  40         0.059255     0.048338    -0.073175     0.014570     0.040700    -0.106906     0.646489
  41         0.019117     0.056433     0.568379    -0.032374     0.011936    -0.084027    -0.216637
  42         0.158087     0.083156     0.313358    -0.193257    -0.056383    -0.081540     0.247633
  43         0.317017     0.094220     0.121206    -0.348391    -0.039319    -0.285826     0.296961
  44         0.496706     0.007536     0.165275    -0.143308     0.029723    -0.114199     0.124754
  45         0.108129     0.103741    -0.004513    -0.249755     0.047876    -0.099885     0.10871[illegible]
  46         0.105265     0.189903    -0.061099    -0.409757    -0.104455    -0.120156    -0.195951
  47         0.024018     0.084868     0.004573    -0.615624    -0.082508    -0.097817    -0.007403
  48         0.016492     0.062442     0.449819     0.021257     0.056156    -0.046929    -0.016084
  49         0.028536     0.053041     0.074325    -0.488028    -0.023186    -0.082346    -0.025316
  50        -0.014777     0.036367     0.046472    -0.202797    -0.065451     0.003242    -0.058590
  51         0.015006     0.062166     0.129006    -0.531645    -0.048796    -0.028373    -0.007737
  52         0.091006    -0.026842     0.065125    -0.555236     0.003141    -0.126377     0.108600
  53         0.078739     0.000569     0.075483    -0.573576    -0.004779    -0.096075     0.087538
  54         0.081026     0.015765     0.560011    -0.195226     0.002545    -0.040139     0.114513
  55         0.147738     0.051691     0.510466    -0.241011     0.003794    -0.027233     0.237537
  56         0.102354     0.155219     0.037598    -0.595856    -0.068315    -0.100779     0.004166
  57         0.074135     0.143690     0.069952    -0.230221     0.013585    -0.458678     0.066544
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EMP-FACTOR ANALYSIS 9TH GRADE

VARIMAX FACTORS

                          8                9               10

      3           -0.057518        -0.246353        -0.067791
      4           -0.084429         0.314919        -0.050030
      7           -0.099103         0.010810         0.117238
     10            0.030319        -0.762428        -0.057458
     12           -0.131927        -0.190063        -0.236046
     13           -0.014003         0.026452        -0.028871
     14           -0.128231         0.004422         0.040634
     15           -0.027186         0.015749        -0.116242
     16           -0.041998        -0.109462        -0.106305
     17           -0.050467        -0.196960        -0.070642
     18           -0.006390        -0.038849         0.003842
     19           -0.044515         0.036876        -0.225131
     20           -0.113191        -0.084418        -0.053922
     21           -0.114180        -0.078089        -0.057563
     22           -0.342484        -0.113470         0.162835
     23           -0.012478        -0.055504        -0.028359
     24           -0.029935        -0.065365        -0.012243
     25           -0.145105        -0.116473        -0.108850
     26           -0.327473        -0.246809         0.039049
     28           -0.190539        -0.190835         0.020837
     31           -0.131999        -0.189928        -0.121511
     32           -0.128175        -0.016019        -0.025451
     33           -0.100846         0.022435         0.025868
     34           -0.480354         0.131737        -0.105118
     35           -0.487249         0.122143        -0.171967
     36           -0.469250        -0.078827         0.139849
     37           -0.229693        -0.059619         0.069514
     38           -0.618009        -0.055215         0.048178
     39           -0.342157        -0.224364         0.246068
     40            0.029276         0.088584         0.087179
     41           -0.045171         0.021422        -0.089640
     42           -0.063391         0.030826         0.289560
     43            0.064589         0.091702         0.017492
     44            0.075116         0.073715         0.005157
     45           -0.017054         0.086942        -0.356261
     46           -0.270421        -0.110394        -0.214796
     47           -0.082884        -0.070167        -0.007960
     48           -0.091294         0.001741        -0.496866
     49           -0.090025        -0.042918        -0.091068
     50            0.036587        -0.117022        -0.562484
     51           -0.053675        -0.076226        -0.028922
     52            0.039371         0.108678        -0.012892
     53           -0.004722         0.060861        -0.085762
     54           -0.150127        -0.024625         0.193800
     55            0.045282        -0.011211         0.116210
     56           -0.135632        -0.116654         0.013457
     57           -0.155263         0.066639        -0.089772
```

Means, Standard Deviations and Intercorrelations of Items from the Sixth Grade Student Questionnaire

The variable numbers, titles, and questionnaire numbers (Q#) for the sixth grade student variables on the following pages are:

1	Sex (Q 1)
2	Age (Q 2)
3	Place of Birth (Q 3)
4	Racial-Ethnic Differences (or Group Membership)(Q 4+)
5	Number of Persons Living in Home (Q 7)
6	Number of Siblings Under 18 (Q 8)
7	Who Acts as Father (Q 9)
8	Who Acts as Mother (Q 10)
9	Father's Educational Level (Q 11)
10	Father's Occupational Level (Q 12)
11	Place of Mother's Birth (Q 13)
12	Mother's Educational Level (Q 14)
13	Mother's Work (Q 15)
14	Parents Speak a Foreign Language in the Home (Q 16)
15	Student Speaks a Foreign Language Outside of School (Q 17)
16	Pre-School Reading (Q 18)
17	Appliances in the Home (Q's 19-22, 25, 26)
18	Reading Materials in the Home (Q's 23, 24, 27)
19	Number of Books Read During Summer (Q 28)
20	Hours Watching TV (Q 29)
21	Number of Different Schools Attended (Q 30)

22	Number of White Students in Class (Q 31)
23	Study Time (Q 32)
24	Want to Change (Q 33)
25	Ability to Do Well (Q 34)
26	Go to Other School (Q 35)
27	Likes School (Q 36)
28	Learning Problem (Q 37)
29	Successful Life (Q 38)
30	Classmates Like Me (Q 39)
31	Good Student (Q 40)
32	Mother's Desire for Child's Academic Excellence (Q 41)
33	Father's Desire for Child's Academic Excellence (Q 42)
34	Non-White Teacher Last Year (Q 43)
35	Number of Close Friends Who Are White (Q 44)
36	Kindergarten Attendance (Q 45)
37	Nursery School Attendance (Q 46)
38	Grade Last Year (Q 47)
39	Time to Get to School (Q 48)
40	Mode of Travel to School (Q 50)
41	Closer Public School (Q 50)
42	Highest Grade Desired (Q 51)
43	Number White Classmates Desired (Q 52)
44	Occupational Level Preferred (Q 53)
45	School Discussions With Parents (Q 54)
46	Non-Verbal Score

47	Verbal Score
48	Reading Comprehension
49	Mathematics Achievement

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EMP-FACTOR ANALYSIS SIXTH GRADE

ALL VARIABLES

THE NUMBER OF OBSERVATIONS IS       11185.

VARIABLE        SUMS     SUMS OF SQUARES              MEAN            SIGMA(N)        SIGMA(N-1)
    1      559873.6797     28030603.2500             50.0558            0.7139            0.7140
    2      560267.4141     28219797.5000             50.0910            3.7282            3.7283
    3      560753.8750     28177812.5000             50.1345            2.4055            2.4056
    4      561193.0859     28418011.2500             50.1737            4.8294            4.8296
    5      560395.2109     28171689.5000             50.1024            2.9075            2.9076
    6      561890.0078     28302616.7500             50.2360            2.5980            2.5981
    7      561159.1563     28218499.0000             50.1707            2.4062            2.4063
    8      561345.7656     28230529.0000             50.1874            2.2784            2.2785
    9      561895.7734     28326923.0000             50.2365            2.9784            2.9785
   10      562478.2891     28410925.2500             50.2886            3.3385            3.3387
   11      561164.9141     28228210.7500             50.1712            2.5703            2.5704
   12      561293.6875     28265450.0000             50.1827            2.9632            2.9633
   13      561339.6719     28183446.7500             50.1868            1.0179            1.0180
   14      562149.3438     28272787.2500             50.2592            1.3238            1.3239
   15      561616.3828     28226271.2500             50.2116            1.5431            1.5431
   16      560674.1719     28184999.5000             50.1273            2.6728            2.6729
   17     3309657.9688    0.99373576E 09            295.9015           35.8848           35.8864
   18     1653097.3281    0.24845795E 09            147.7959           19.2313           19.2327
   19      561830.7734     28257845.0000             50.2307            1.8107            1.8108
   20      561343.6328     28225320.2500             50.1872            2.1781            2.1782
   21      561801.6875     28223578.2500             50.2281            0.6902            0.6902
   22      562213.2969     28451024.5000             50.2649            4.1366            4.1370
   23      561671.9063     28228154.2500             50.2165            1.4321            1.4322
   24      562189.0391     28299213.7500             50.2628            1.9387            1.9387
   25      561996.0547     28273609.7500             50.2455            1.7898            1.7899
   26      562389.1250     28308974.0000             50.2807            1.6830            1.6831
   27      561952.9297     28245221.5000             50.2417            1.0261            1.0261
   28      562299.4375     28295323.7500             50.2726            1.5551            1.5552
   29      562165.5313     28426017.2500             50.2607            3.9124            3.9125
   30      562823.8594     28333511.2500             50.3195            1.0565            1.0565
   31      562120.7031     28380837.7500             50.2567            3.4162            3.4163
   32      562702.3672     28341748.7500             50.3087            1.7163            1.7164
   33      563113.6328     28380863.5000             50.3454            1.6558            1.6559
   34      564571.0391     28572364.5000             50.4757            2.5934            2.5936
   35      563535.2422     28567264.0000             50.3831            3.9510            3.9511
   36      563306.3828     28399875.2500             50.3627            1.6450            1.6451
   37      563425.3594     28403341.7500             50.3733            1.3944            1.3945
   38      563611.0859     28458843.5000             50.3899            2.2876            2.2877
   39      563541.5000     28441137.2500             50.3837            2.0682            2.0682
   40      563107.5781     28384949.7500             50.3449            1.7781            1.7781
   41      564136.6250     28508682.2500             50.4369            2.2253            2.2254
   42      564076.4686     28579272.5000             50.4315            3.4359            3.4361
   43      563953.3203     28552323.7500             50.4205            3.2414            3.2415
   44       97336.6475       935995.1328              8.7024            2.8197            2.8198
   45      565572.1641     28618603.0000             50.5652            1.3476            1.3477
   46      559171.3359     29071529.2500             49.9930            9.9928            9.9933
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EMP-FACTOR ANALYSIS SIXTH GRADE


ALL VARIABLES


THE NUMBER OF OBSERVATIONS IS      11185.

VARIABLE        SUMS         SUMS OF SQUARES          MEAN            SIGMA(N)         SIGMA(N-1)
    47      558165.0469      28947265.2500          49.9030            9.8861            9.8865
    48      557819.4141      28929701.0000          49.8721            9.9623            9.9627
    49      558823.0391      29042620.2500          49.9618           10.0192           10.0197
```

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CMP-FACTOR ANALYSIS SIXTH GRADE

CORRELATION MATRIX       ALL VARIABLES
                         1              2              3              4              5              6              7

     1            1.000000       0.149951       0.037729       0.010554       0.067201       0.043972       0.058562
     2            0.149951       1.000000       0.133600       0.224173       0.187257       0.176240       0.157838
     3            0.037729       0.133598       1.000000       0.181803       0.120336       0.109040       0.100215
     4            0.010554       0.224172       0.181803       1.000000       0.255915       0.261817       0.265929
     5            0.067190       0.187255       0.120336       0.255915       1.000000       0.621195       0.112023
     6            0.043960       0.176238       0.109036       0.261815       0.621195       1.000000       0.112854
     7            0.058549       0.157838       0.100215       0.265929       0.112023       0.112658       1.000000
     8            0.017094       0.138432       0.093403       0.177226       0.089004       0.095576       0.413799
     9            0.004678       0.177541       0.122712       0.187777       0.159685       0.151212       0.111553
    10            0.012434       0.172091       0.142475       0.261427       0.197035       0.180560       0.183717
    11            0.034300       0.138676       0.298055       0.202440       0.135824       0.146020       0.125646
    12            0.021331       0.197735       0.128329       0.196842       0.166216       0.150888       0.121188
    13            0.066892       0.037853       0.046680       0.157029       0.010958       0.003364       0.117117
    14            0.090598       0.095293       0.127587       0.137389       0.095834       0.062207       0.070891
    15            0.093854       0.130874       0.120537       0.182497       0.084165       0.086073       0.111524
    16            0.104470       0.154769       0.100465       0.144310       0.124450       0.112272       0.097734
    17            0.074861       0.191346       0.161995       0.262327       0.147526       0.183531       0.203533
    18            0.056962       0.194462       0.162064       0.232057       0.141501       0.162655       0.185012
    19            0.138040       0.106815       0.058555       0.026230       0.058160       0.054094       0.027174
    20            0.047115       0.114466       0.059798       0.176185       0.112538       0.109355       0.096028
    21            0.165976       0.177964      -0.031059       0.027729       0.072658       0.073522       0.153072
    22            0.024391       0.167100       0.132414       0.651180       0.221275       0.218925       0.216580
    23            0.037862       0.099044       0.047674       0.089303       0.066949       0.068227       0.062781
    24            0.050432       0.110407       0.067593       0.135944       0.117522       0.104975       0.096903
    25            0.053979       0.092879       0.056399       0.068696       0.063890       0.056033       0.060557
    26            0.057647       0.091300       0.039275       0.161201       0.083481       0.066864       0.086771
    27            0.243722       0.092452       0.072589      -0.012382       0.028837       0.005165       0.043074
    28            0.023393       0.080207       0.032205       0.022410       0.054872       0.031097       0.053867
    29            0.044083       0.173033       0.114165       0.206990       0.178530       0.145606       0.101124
    30            0.157976       0.078659       0.051548       0.043804       0.059836       0.054098       0.074720
    31            0.039379       0.198570       0.095792       0.078994       0.115287       0.103316       0.083236
    32            0.048740       0.129564       0.087189       0.107510       0.093583       0.084977       0.091052
    33            0.014161       0.111971       0.061710       0.084650       0.069892       0.079699       0.134655
    34            0.026062       0.120081       0.099199       0.360497       0.127699       0.135849       0.116809
    35            0.008803       0.150881       0.114363       0.625467       0.211601       0.215278       0.223744
    36            0.068703       0.137102       0.042464       0.077705       0.123999       0.108506       0.063162
    37            0.046161       0.071819       0.067501       0.115483       0.065805       0.060650       0.093184
    38            0.080865       0.201519       0.097309       0.160038       0.094630       0.099428       0.102326
    39            0.042854       0.121719       0.073240       0.122099       0.099562       0.104551       0.068900
    40            0.111910       0.110300       0.059081       0.110463       0.080625       0.087607       0.091550
    41            0.036494       0.150365       0.095300       0.163306       0.096973       0.088247       0.109240
    42            0.074050       0.243596       0.124286       0.149080       0.151393       0.135169       0.131993
    43            0.075413       0.139912       0.106691       0.422240       0.164620       0.162012       0.154513
    44           -0.101249       0.059799       0.051855       0.040865       0.058603       0.061741       0.031289
    45            0.128906       0.103658       0.051703       0.085187       0.090169       0.079685       0.075814
    46            0.058911       0.271919       0.194976       0.407217       0.227681       0.216408       0.212871
    47            0.051286       0.354235       0.240444       0.456309       0.295975       0.271418       0.225850
    48            0.147692       0.329847       0.210588       0.388027       0.256369       0.227030       0.190492
    49           -0.020670       0.328171       0.217673       0.444456       0.257508       0.233852       0.210613
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EMP-FACTOR ANALYSIS SIXTH GRADE

CORRELATION MATRIX   ALL VARIABLES

	8	9	10	11	12	13	14
1	0.017107	0.004688	0.012434	0.034312	0.021331	0.066692	0.090598
2	0.138432	0.177541	0.172091	0.138676	0.197735	0.037853	0.095292
3	0.093403	0.122715	0.142472	0.298058	0.128329	0.046680	0.127567
4	0.177226	0.187778	0.261427	0.202440	0.196840	0.157024	0.137335
5	0.089004	0.159688	0.197035	0.135824	0.166213	0.010958	0.095814
6	0.095574	0.151209	0.180557	0.146017	0.150885	0.008355	0.062200
7	0.413799	0.111558	0.183717	0.125650	0.121188	0.117117	0.070691
8	1.000000	0.069098	0.088382	0.139539	0.104838	0.051965	0.063182
9	0.069098	1.000000	0.297489	0.170684	0.535793	0.053737	0.065586
10	0.088385	0.297492	1.000000	0.190434	0.246213	0.049538	0.041900
11	0.139539	0.170687	0.190432	1.000000	0.178669	0.039536	0.158789
12	0.104838	0.535795	0.246213	0.178672	1.000000	0.045973	0.096580
13	0.051975	0.053744	0.049538	0.039536	0.045973	1.000000	0.044369
14	0.063182	0.065593	0.041900	0.158789	0.096580	0.044369	1.000000
15	0.114443	0.076967	0.066907	0.136351	0.101388	0.100646	0.446945
16	0.096574	0.195399	0.172304	0.157991	0.212876	0.028318	0.096347
17	0.174441	0.142598	0.163336	0.142808	0.135096	0.075400	0.086122
18	0.165922	0.155320	0.158361	0.147184	0.145877	0.076788	0.083872
19	0.032800	0.127355	0.108278	0.097136	0.134629	0.007664	0.021556
20	0.072730	0.122978	0.118070	0.091722	0.126467	0.038106	0.039114
21	0.052622	0.044059	0.021652	0.022806	0.065926	-0.001018	0.079731
22	0.140095	0.159512	0.222159	0.126228	0.163344	0.154677	0.063544
23	0.044595	0.066346	0.061442	0.067122	0.080766	0.024440	0.060319
24	0.089330	0.094254	0.106627	0.076103	0.119173	0.055521	0.096879
25	0.058643	0.121954	0.101531	0.089797	0.117443	-0.005521	0.075569
26	0.069185	0.072776	0.074548	0.071098	0.079482	0.046133	0.080387
27	0.033569	0.059666	0.035417	0.064190	0.048306	0.053841	0.065519
28	0.003754	0.099965	0.064870	0.050484	0.093605	0.051791	0.070259
29	0.103420	0.205167	0.205572	0.139349	0.195951	0.051673	0.085749
30	0.078977	0.053858	0.047972	0.074164	0.071670	0.002099	0.056415
31	0.070900	0.173812	0.160634	0.129226	0.166692	0.015085	0.055845
32	0.110045	0.101469	0.119557	0.114920	0.113931	0.030500	0.060254
33	0.070303	0.106774	0.128124	0.097138	0.098708	0.026336	0.037725
34	0.095140	0.085935	0.118026	0.100372	0.090045	0.061076	0.061615
35	0.132770	0.137197	0.216333	0.120978	0.151369	0.129313	0.055192
36	0.054794	0.191552	0.129662	0.066015	0.178945	0.029139	-0.042828
37	0.060955	0.069421	0.095882	0.087971	0.080072	0.055902	0.050516
38	0.114555	0.061892	0.077063	0.101506	0.089746	0.036224	0.049267
39	0.083391	0.115531	0.132384	0.085802	0.120632	0.002686	0.006221
40	0.098816	0.062899	0.080811	0.088160	0.063006	0.050236	0.074026
41	0.094344	0.097706	0.124753	0.108401	0.101896	0.037753	0.058712
42	0.114949	0.169682	0.178987	0.133330	0.155568	0.011893	0.074195
43	0.110519	0.109936	0.175775	0.103770	0.113536	0.090259	0.039244
44	0.029863	0.101055	0.125636	0.083201	0.113211	-0.002069	0.020611
45	0.060493	0.089131	0.094365	0.078950	0.104326	0.018933	0.057022
46	0.207864	0.198175	0.236864	0.207006	0.209172	0.105299	0.078331
47	0.194321	0.305393	0.342461	0.252290	0.304541	0.105327	0.119223
48	0.178463	0.251746	0.297131	0.225418	0.248576	0.096660	0.120811
49	0.185914	0.259656	0.315298	0.233985	0.258377	0.091469	0.107757

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EMP-FACTOR ANALYSIS SIXTH GRADE

CORRELATION MATRIX       ALL VARIABLES

                     15          16          17          18          19          20          21

  1            0.093854    0.104482    0.074851    0.056962    0.138040    0.047115    0.166021
  2            0.130878    0.154769    0.191346    0.194462    0.106815    0.114466    0.177972
  3            0.120537    0.100465    0.161994    0.162054    0.058555    0.059798   -0.031045
  4            0.182497    0.144310    0.262326    0.232056    0.026230    0.176163    0.027729
  5            0.084165    0.124450    0.147526    0.141501    0.058155    0.112538    0.072656
  6            0.086068    0.112269    0.183529    0.162655    0.054089    0.109355    0.073510
  7            0.111530    0.097734    0.203503    0.185012    0.027174    0.096028    0.153072
  8            0.114443    0.096574    0.174438    0.165922    0.032800    0.072730    0.052622
  9            0.076962    0.195396    0.142597    0.155319    0.127351    0.122975    0.044059
 10            0.066911    0.172304    0.163336    0.158361    0.108282    0.118070    0.021632
 11            0.136351    0.157988    0.142806    0.147184    0.097131    0.091722    0.022806
 12            0.101393    0.212676    0.135096    0.145877    0.134629    0.126467    0.0659[illegible]
 13            0.100661    0.028318    0.075400    0.076788    0.007664    0.038106   -0.00[illegible]
 14            0.446943    0.096347    0.086132    0.083869    0.021558    0.039114    0.079[illegible]
 15            1.000000    0.109771    0.129639    0.124966    0.040285    0.096313    0.178414
 16            0.109771    1.000000    0.107912    0.121265    0.208428    0.115203    0.054247
 17            0.129642    0.107913    1.000000    0.849657    0.044509    0.119895    0.084964
 18            0.124969    0.121265    0.849657    1.000000    0.046457    0.108375    0.087929
 19            0.040285    0.208428    0.044506    0.046457    1.000000    0.059346    0.039938
 20            0.096313    0.115203    0.119895    0.108375    0.059346    1.000000    0.075472
 21            0.178414    0.054235    0.084956    0.087922    0.039938    0.075457    1.000000
 22            0.097113    0.112047    0.238256    0.183539    0.027106    0.168609    0.015861
 23            0.074452    0.057728    0.080086    0.070655    0.007137    0.117820    0.041903
 24            0.109555    0.089085    0.091862    0.078720    0.045532    0.111770    0.073703
 25            0.066920    0.121345    0.087683    0.095248    0.114582    0.061260    0.075976
 26            0.131354    0.075130    0.092393    0.082270    0.041161    0.104232    0.122364
 27            0.037042    0.118397    0.067803    0.078236    0.171790    0.088907    0.117791
 28            0.051006    0.059648    0.037057    0.042237    0.102514    0.055878    0.048710
 29            0.093232    0.208335    0.141069    0.144296    0.133166    0.140451    0.057655
 30            0.134653    0.074827    0.091884    0.080276    0.054612    0.075384    0.135093
 31            0.061028    0.181044    0.145343    0.145814    0.165228    0.092975    0.093511
 32            0.092431    0.124956    0.120836    0.126917    0.085752    0.086324    0.082592
 33            0.086543    0.105494    0.144430    0.115512    0.081138    0.075364    0.047485
 34            0.101673    0.069963    0.146201    0.116111    0.018020    0.097411    0.047859
 35            0.102821    0.115851    0.223443    0.173737    0.020836    0.152822   -0.000677
 36            0.017980    0.086254    0.105961    0.111390    0.060030    0.062324    0.0301[illegible]1
 37            0.054162    0.063715    0.098782    0.101714    0.029841    0.030356    0.064009
 38            0.105063    0.070209    0.215058    0.176621    0.055486    0.070044    0.073234
 39            0.046414    0.079132    0.170180    0.162292    0.043397    0.088770    0.032070
 40            0.114497    0.058433    0.209027    0.188873    0.037412    0.085240    0.074075
 41            0.111654    0.110404    0.129044    0.146341    0.066172    0.075457    0.144008
 42            0.109955    0.161115    0.215461    0.203794    0.153207    0.109013    0.065791
 43            0.088164    0.107701    0.175442    0.144392    0.053963    0.122564    0.020632
 44            0.007750    0.099440    0.147569    0.162721    0.081344    0.039375    0.004629
 45            0.090715    0.137877    0.097351    0.094115    0.114476    0.091846    0.076341
 46            0.112421    0.179104    0.329050    0.318166    0.095598    0.164314    0.034690
 47            0.142083    0.265520    0.306003    0.304078    0.180519    0.199376    0.050617
 48            0.132941    0.247389    0.277756    0.272318    0.183072    0.183860    0.052549
 49            0.138028    0.225273    0.266288    0.261979    0.130707    0.207542    0.073425
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EMP-FACTOR ANALYSIS SIXTH GRADE

CORRELATION MATRIX      ALL VARIABLES

                  22            23            24            25            26            27            28

   1          0.024391      0.037862      0.050432      0.053979      0.057647      0.243722      0.023393
   2          0.167100      0.099044      0.110410      0.092882      0.091300      0.092452      0.080207
   3          0.132414      0.047674      0.067593      0.056404      0.039275      0.072589      0.032205
   4          0.651179      0.089303      0.135944      0.068696      0.161201     -0.012382      0.022407
   5          0.221275      0.066949      0.117522      0.063890      0.083476      0.028637      0.054867
   6          0.218923      0.068221      0.104971      0.056035      0.066859      0.005157      0.031097
   7          0.216580      0.062781      0.096908      0.060557      0.086771      0.043074      0.053867
   8          0.140095      0.044588      0.089330      0.058643      0.069179      0.033569      0.003754
   9          0.159512      0.066341      0.094250      0.121954      0.072771      0.059666      0.099960
  10          0.222159      0.061442      0.106630      0.101534      0.074548      0.035417      0.064870
  11          0.126226      0.067116      0.076103      0.089797      0.071093      0.064182      0.050479
  12          0.163344      0.080766      0.119173      0.117443      0.079482      0.048313      0.093605
  13          0.154677      0.024440      0.055521     -0.005521      0.046133      0.053841      0.051791
  14          0.063584      0.060339      0.096879      0.075589      0.080387      0.066559      0.070269
  15          0.097110      0.074442      0.109548      0.066912      0.131345      0.037042      0.050996
  16          0.112047      0.057728      0.089085      0.121345      0.075130      0.118397      0.059648
  17          0.238256      0.080086      0.091864      0.087683      0.092393      0.067808      0.037057
  18          0.183540      0.070655      0.078722      0.095248      0.082270      0.078240      0.042237
  19          0.027106      0.007137      0.045532      0.114582      0.041161      0.171790      0.102514
  20          0.168607      0.117820      0.111770      0.061260      0.104226      0.088907      0.055878
  21          0.015861      0.041881      0.073703      0.075978      0.122365      0.117791      0.048669
  22          1.000000      0.082122      0.123102      0.042604      0.159556     -0.005755     -0.007133
  23          0.082122      1.000000      0.060814      0.018146      0.041703      0.043426      0.028051
  24          0.123099      0.060806      1.000000      0.062818      0.159725      0.117272      0.135235
  25          0.042604      0.018146      0.062818      1.000000      0.061453      0.125552      0.122310
  26          0.159559      0.041703      0.159725      0.061461      1.000000      0.175742      0.086867
  27         -0.005755      0.043426      0.117284      0.125552      0.175742      1.000000      0.132596
  28         -0.007133      0.028041      0.135235      0.122310      0.086887      0.132596      1.000000
  29          0.179702      0.058447      0.207970      0.178483      0.119118      0.112703      0.201426
  30          0.036184      0.041468      0.096024      0.141705      0.108751      0.151736      0.067044
  31          0.026169      0.046299      0.123684      0.273937      0.071683      0.170381      0.209415
  32          0.073562      0.044368      0.071267      0.114411      0.063715      0.108860      0.067079
  33          0.064570      0.034762      0.062624      0.103807      0.049816      0.081959      0.062003
  34          0.358430      0.044659      0.078873      0.032103      0.112378      0.030784      0.015761
  35          0.670402      0.065256      0.119575      0.038514      0.166449     -0.014644      0.002132
  36          0.052798      0.051556      0.050280      0.047651      0.015541      0.073016      0.039615
  37          0.093519      0.021233      0.046715      0.069291      0.051745      0.012169      0.060103
  38          0.110066      0.044161      0.056178      0.053628      0.071099      0.101982      0.030849
  39          0.089073      0.090890      0.048895      0.058903      0.053132      0.062659      0.037417
  40          0.078496      0.064717      0.066161      0.068211      0.061830      0.100495      0.027225
  41          0.140036      0.068959      0.096814      0.098030      0.126603      0.067212      0.079064
  42          0.101571      0.045024      0.093146      0.143704      0.091693      0.173973      0.078789
  43          0.442691      0.069216      0.094938      0.055417      0.125978      0.052110      0.035361
  44          0.011436      0.036375      0.052300      0.078556      0.034199      0.064412      0.076222
  45          0.050416      0.058171      0.085320      0.065079      0.085174      0.149662      0.065612
  46          0.342214      0.105484      0.149654      0.117885      0.127035      0.087287      0.093515
  47          0.386106      0.131318      0.161817      0.169046      0.149941      0.095726      0.150710
  48          0.327494      0.123700      0.178724      0.154567      0.139402      0.137352      0.132345
  49          0.379825      0.132578      0.189013      0.181788      0.143564      0.089108      0.152810
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EMP-FACTOR ANALYSIS SIXTH GRADE

CORRELATION MATRIX      ALL VARIABLES

              29          30          31          32          33          34          35

   1       0.044083    0.158006    0.039388    0.048740    0.014161    0.026062    0.008803
   2       0.173033    0.078664    0.198572    0.129564    0.111971    0.120081    0.150885
   3       0.114165    0.051548    0.095792    0.087189    0.061710    0.099199    0.114363
   4       0.206990    0.043809    0.078993    0.107507    0.084650    0.360497    0.625467
   5       0.178530    0.059836    0.115287    0.093579    0.069892    0.127699    0.211601
   6       0.145603    0.054098    0.103313    0.084972    0.079694    0.135849    0.215278
   7       0.101124    0.074720    0.083236    0.091052    0.134685    0.116805    0.223750
   8       0.103417    0.078977    0.070900    0.110045    0.070303    0.095136    0.132770
   9       0.205165    0.053855    0.173810    0.101464    0.106770    0.085935    0.137197
  10       0.205574    0.047979    0.160634    0.119561    0.128124    0.118026    0.216334
  11       0.139346    0.074164    0.129226    0.114915    0.097138    0.100368    0.120978
  12       0.195951    0.071678    0.166692    0.113931    0.098708    0.090045    0.151371
  13       0.051673    0.002099    0.015085    0.030500    0.026336    0.081076    0.129313
  14       0.085749    0.056415    0.066840    0.060254    0.037728    0.061613    0.055199
  15       0.093232    0.134653    0.061023    0.092423    0.086334    0.101667    0.102821
  16       0.208335    0.074835    0.181044    0.124956    0.105494    0.069963    0.115851
  17       0.141069    0.091889    0.145343    0.120836    0.144433    0.146201    0.223443
  18       0.144296    0.080280    0.145816    0.126917    0.115515    0.116111    0.173737
  19       0.133166    0.054612    0.165228    0.085752    0.081138    0.018020    0.020836
  20       0.140428    0.075384    0.092975    0.086318    0.075378    0.097411    0.152825
  21       0.057663    0.135095    0.093502    0.082592    0.047469    0.047827   -0.000877
  22       0.179702    0.036189    0.026169    0.073562    0.064570    0.358430    0.670402
  23       0.068447    0.041483    0.046299    0.044359    0.034762    0.044659    0.065258
  24       0.207970    0.096024    0.123680    0.071260    0.062624    0.078873    0.119575
  25       0.178483    0.141717    0.273934    0.114404    0.103799    0.032103    0.038514
  26       0.119118    0.108763    0.071683    0.063715    0.049816    0.112378    0.166449
  27       0.112703    0.151756    0.170381    0.108860    0.081959    0.030784   -0.014638
  28       0.201426    0.067059    0.209415    0.067079    0.062003    0.015761    0.002152
  29       1.000000    0.121597    0.253241    0.106951    0.105154    0.119845    0.184190
  30       0.121591    1.000000    0.180870    0.096533    0.064806    0.031008    0.035974
  31       0.253241    0.180877    1.000000    0.221195    0.197843    0.031904    0.039216
  32       0.106951    0.096546    0.221195    1.000000    0.699211    0.062016    0.084185
  33       0.105154    0.064819    0.197843    0.699211    1.000000    0.061522    0.082008
  34       0.119845    0.031016    0.031904    0.062016    0.061522    1.000000    0.341595
  35       0.184189    0.035974    0.039214    0.084181    0.082004    0.341595    1.000000
  36       0.108594    0.015369    0.086504    0.038895    0.034752    0.015633    0.050462
  37       0.087895    0.032816    0.082052    0.077733    0.053718    0.040255    0.076654
  38       0.086437    0.074162    0.061108    0.090749    0.079211    0.102649    0.113552
  39       0.092962    0.046259    0.077780    0.085645    0.080921    0.036926    0.072463
  40       0.066940    0.057970    0.083320    0.094212    0.036128    0.047986    0.073455
  41       0.140108    0.063064    0.119883    0.104500    0.086600    0.100682    0.139240
  42       0.196747    0.097290    0.192425    0.177958    0.166829    0.090446    0.112874
  43       0.175876    0.055167    0.053857    0.073995    0.062618    0.227710    0.523966
  44       0.130141    0.040863    0.135603    0.073300    0.077292    0.019542    0.012623
  45       0.117414    0.094006    0.116651    0.116514    0.106776    0.050656    0.050848
  46       0.264939    0.074151    0.215933    0.120181    0.107357    0.212346    0.329535
  47       0.395808    0.092072    0.332716    0.164050    0.155767    0.240748    0.363766
  48       0.357067    0.104358    0.319753    0.136258    0.135709    0.217261    0.313942
  49       0.357080    0.104014    0.320364    0.162130    0.157909    0.240636    0.364839
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EMP-FACTOR ANALYSIS SIXTH GRADE

CORRELATION MATRIX   ALL VARIABLES

	36	37	38	39	40	41	42
1	0.068703	0.046183	0.080865	0.042854	0.111928	0.036509	0.074050
2	0.137102	0.071823	0.201519	0.121719	0.110304	0.150368	0.243596
3	0.042464	0.067501	0.097309	0.073240	0.059081	0.096300	0.124266
4	0.077705	0.115483	0.160036	0.122099	0.110463	0.163306	0.149080
5	0.123999	0.065805	0.094630	0.099562	0.080621	0.096973	0.151390
6	0.108501	0.060644	0.099428	0.104547	0.087602	0.088247	0.135169
7	0.063182	0.093184	0.102326	0.068900	0.091550	0.109240	0.131995
8	0.054788	0.060955	0.114555	0.083386	0.098816	0.094340	0.114949
9	0.191548	0.069415	0.061889	0.115527	0.062895	0.097702	0.169662
10	0.129662	0.095882	0.077065	0.132384	0.080815	0.124753	0.178969
11	0.066015	0.087971	0.101503	0.085798	0.088160	0.108401	0.133330
12	0.178945	0.080077	0.089749	0.120636	0.063006	0.101899	0.155570
13	0.029139	0.055902	0.036224	0.002686	0.050248	0.037753	0.011893
14	-0.043826	0.050516	0.049257	0.006221	0.074028	0.058772	0.074195
15	0.017972	0.054162	0.105057	0.046414	0.114489	0.111654	0.109955
16	0.086249	0.063721	0.070209	0.079132	0.058433	0.110404	0.161115
17	0.106961	0.098782	0.215058	0.170180	0.209027	0.129044	0.213461
18	0.111390	0.101718	0.176621	0.162294	0.188873	0.146343	0.203794
19	0.060030	0.029841	0.055491	0.043397	0.037412	0.066172	0.153207
20	0.062324	0.030349	0.070044	0.088765	0.085240	0.075457	0.109013
21	0.030082	0.063986	0.073204	0.032054	0.074075	0.143993	0.065781
22	0.052798	0.093519	0.110066	0.089073	0.078496	0.140036	0.101571
23	0.051556	0.021233	0.044161	0.090890	0.064717	0.068959	0.045024
24	0.050273	0.046715	0.056173	0.048895	0.068161	0.096814	0.093140
25	0.047651	0.069291	0.058628	0.058903	0.068211	0.098030	0.143704
26	0.015541	0.051745	0.071104	0.053132	0.061830	0.126609	0.091897
27	0.073016	0.012185	0.101982	0.062659	0.100495	0.067212	0.173973
28	0.039615	0.060114	0.030849	0.037417	0.027233	0.079064	0.078771
29	0.108594	0.087895	0.086437	0.092965	0.056940	0.140108	0.196747
30	0.015356	0.032818	0.074162	0.046259	0.057970	0.063054	0.097290
31	0.086504	0.082052	0.061108	0.077780	0.083320	0.119683	0.192423
32	0.038895	0.077733	0.090754	0.085651	0.094219	0.104500	0.177958
33	0.034752	0.053718	0.079211	0.080921	0.086123	0.086600	0.166829
34	0.015633	0.040261	0.102649	0.036926	0.047986	0.100682	0.090442
35	0.050402	0.076654	0.113552	0.072463	0.073455	0.139240	0.112874
36	1.000000	-0.024175	0.065060	0.188743	0.056234	0.064986	0.108642
37	-0.024175	1.000000	0.048754	0.058331	0.067874	0.142158	0.056496
38	0.065060	0.048754	1.000000	0.125216	0.146127	0.114356	0.202236
39	0.188736	0.058331	0.125216	1.000000	0.165769	0.153263	0.160430
40	0.056234	0.067874	0.146127	0.165769	1.000000	0.132605	0.141031
41	0.064986	0.142158	0.114356	0.153263	0.132605	1.000000	0.157964
42	0.108642	0.056496	0.202236	0.160430	0.141031	0.157964	1.000000
43	0.070222	0.051421	0.112060	0.065087	0.079871	0.103008	0.157400
44	0.049468	0.055965	0.034519	0.079948	0.037300	0.064409	0.189634
45	0.069991	0.046471	0.063060	0.067732	0.087121	0.059715	0.137895
46	0.168133	0.100231	0.193734	0.191517	0.150736	0.177774	0.255321
47	0.173932	0.141534	0.219478	0.187681	0.158599	0.221257	0.225142
48	0.133348	0.113439	0.206445	0.171916	0.151969	0.204185	0.311000
49	0.140694	0.131542	0.189933	0.175860	0.152031	0.232315	0.301520

EMP-FACTOR ANALYSIS SIXTH GRADE

CURRELATION MATRIX   ALL VARIABLES

	43	44	45	46	47	48	49
1	0.075423	-0.101246	0.128930	0.058911	0.051286	0.147692	-0.020667
2	0.139912	0.059799	0.103663	0.271919	0.354235	0.329847	0.328172
3	0.106691	0.051855	0.051703	0.194977	0.240445	0.210588	0.217673
4	0.422240	0.040855	0.085187	0.407217	0.456309	0.388027	0.444457
5	0.164620	0.058603	0.090169	0.227681	0.295975	0.256369	0.257508
6	0.162012	0.061741	0.079678	0.216407	0.271418	0.227029	0.233852
7	0.154513	0.031289	0.075814	0.212871	0.225850	0.190492	0.210614
8	0.110519	0.029863	0.060493	0.207864	0.194321	0.178462	0.185914
9	0.109936	0.101055	0.089125	0.193174	0.305393	0.251746	0.259656
10	0.175777	0.125637	0.094365	0.236864	0.342461	0.297131	0.315299
11	0.103770	0.083201	0.078950	0.207006	0.252290	0.225418	0.233985
12	0.113536	0.113211	0.104332	0.209172	0.304541	0.248576	0.258277
13	0.090259	-0.002069	0.018949	0.105299	0.105330	0.096660	0.091469
14	0.039254	0.020812	0.067002	0.078331	0.119225	0.120650	0.107789
15	0.088164	0.007750	0.090704	0.112421	0.142081	0.132939	0.138025
16	0.107701	0.099441	0.137877	0.179104	0.265520	0.247389	0.225274
17	0.175442	0.147669	0.097351	0.329050	0.306004	0.277756	0.266286
18	0.144392	0.162721	0.094118	0.318166	0.304078	0.272318	0.261979
19	0.053963	0.081344	0.114476	0.095598	0.180519	0.183072	0.130768
20	0.122584	0.039376	0.091846	0.164313	0.199376	0.183860	0.207542
21	0.020622	0.004631	0.078317	0.034690	0.060604	0.062549	0.073423
22	0.442691	0.011436	0.050416	0.342214	0.386106	0.327494	0.379826
23	0.069216	0.036375	0.038163	0.106484	0.131318	0.123700	0.132578
24	0.094938	0.052300	0.085311	0.149654	0.181616	0.178724	0.189015
25	0.055417	0.078556	0.065079	0.117885	0.169045	0.154567	0.181769
26	0.125982	0.034200	0.085174	0.127036	0.149941	0.139403	0.143565
27	0.052110	0.064412	0.149662	0.087287	0.095729	0.137352	0.059100
28	0.035381	0.076223	0.065623	0.093517	0.150710	0.132343	0.152811
29	0.175876	0.130141	0.117418	0.264939	0.395808	0.357667	0.357080
30	0.055167	0.040860	0.094006	0.074148	0.092070	0.104358	0.104014
31	0.053857	0.135603	0.116651	0.215933	0.332716	0.319750	0.320364
32	0.073995	0.073300	0.116523	0.120181	0.164050	0.136259	0.162130
33	0.062618	0.077292	0.106786	0.107357	0.155767	0.135709	0.157911
34	0.227712	0.019543	0.050656	0.212346	0.240748	0.217261	0.240656
35	0.523986	0.012620	0.050848	0.329535	0.363765	0.313942	0.364819
36	0.070222	0.049470	0.069991	0.168133	0.173932	0.133348	0.140695
37	0.051421	0.055966	0.046471	0.100231	0.141534	0.113439	0.131542
38	0.112060	0.034519	0.063060	0.193734	0.219478	0.206446	0.189933
39	0.065087	0.079948	0.067732	0.191517	0.187681	0.171916	0.175862
40	0.079871	0.037300	0.087121	0.150736	0.158599	0.151969	0.152003
41	0.103008	0.064410	0.059716	0.177774	0.221257	0.204165	0.232314
42	0.157405	0.189634	0.137896	0.255321	0.325142	0.311000	0.301621
43	1.000000	0.029243	0.067056	0.281536	0.306613	0.273320	0.297291
44	0.029243	1.000000	0.049064	0.113159	0.165137	0.139578	0.154902
45	0.067061	0.049064	1.000000	0.104925	0.132057	0.132345	0.111911
46	0.281536	0.113159	0.104925	1.000000	0.602658	0.588048	0.615691
47	0.306613	0.165137	0.132057	0.602658	1.000000	0.797870	0.743599
48	0.273320	0.139578	0.132345	0.588048	0.797870	1.000000	0.730220
49	0.297290	0.154902	0.111911	0.615691	0.743599	0.730220	1.000000

Means, Standard Deviations and Intercorrelations of Items from the Third Grade Student Questionnaire

The variable numbers, titles and questionnaire numbers (Q#) for the third grade student variables on the following pages are:

1 Sex (Q 1)

2 Age (Q 2)

3 Racial-Ethnic Differences (or Group Membership)(Q 3+)

4 Number of Persons Living in Home (Q 6)

5 Number of Siblings Under 18 (Q 7)

6 Who Acts as Father (Q 8)

7 Who Acts as Mother (Q 9)

8 Mother's Work (Q 10)

9 Pre-School Reading (Q 11)

10 Parents Speak a Foreign Language in the Home (Q 12)

11 Student Speaks a Foreign Language Outside of School (Q 13)

12 Number of Rooms in the Home (Q 14)

13 Appliances in the Home (Q's 15-18, 21, 22)

14 Reading Materials in the Home (Q's 19, 20, 23)

15 Number of Books Read During Summer (Q 24)

16 Hours Watching TV (Q 25)

17 Number of Different Schools Attended (Q 26)

18 Go to Other School (Q 27)

19 Classmates Like Me (Q 28)

20 Good Student (Q 29)

21 Mother's Desire for Childs Academic Excellence (Q 30)

22 Father's Desire for Childs Academic Exclllence (Q 31)

23 Non-White Teacher Last Year (Q 32)

24 Number of White Friends (Q 33)

25 Kindergarten Attendance (Q 34)

26 Nursery School Attendance (Q 35)

27 Grade Last Year (Q 36)

28 Time to Get to School (Q 37)

29 Mode of Travel to School (Q 38)

30 Number White Classmates (Q 39)

31 Number White Classmates Last Year (Q 40)

32 Number White Friends (Q 41)

33 Place of Birth (Q 48)

34 Father's Educational Level (Q 49)

35 Mother's Educational Level (Q 50)

36 Father's Occupational Level (51)

37 Closer Public School (Q 52)

38 Non-Verbal Score

39 Verbal Score

40 A Null Variable of Zero

41 Reading Comprehension

42 Mathematics Achievement

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EMP-FACTOR ANALYSIS THIRD GRADE

ALL VARIABLES

THE NUMBER OF OBSERVATIONS IS       12072.

VARIABLE          SUMS        SUMS OF SQUARES           MEAN             SIGMA(N)           SIGMA(N-1)
     1        604410.2344      30266231.5000          50.0671             0.6534              0.6534
     2        603846.5703      30271882.0000          50.0204             2.3597              2.3598
     3        598812.2500      29900936.7500          49.6034             4.0480              4.0481
     4        603619.4219      30259265.5000          50.0016             2.5309              2.5310
     5        607852.9644      30697997.0000          50.3523             2.7486              2.7487
     6        605055.9297      30366568.0000          50.1206             1.8384              1.8385
     7        605270.9453      30373468.2500          50.1384             1.4716              1.4716
     8        604863.8516      30323210.5000          50.1047             1.1759              1.1760
     9        605517.5469      30405395.2500          50.1588             1.6618              1.6618
    10        605287.8438      30363346.7500          50.1398             1.0894              1.0894
    11        605330.2891      30365288.2500          50.1433             0.9975              0.9975
    12        603840.7344      30292520.7500          50.0199             2.7067              2.7068
    13       3541792.0313     0.10498577E 10         293.3890            29.8201             29.8213
    14       1779875.1563     0.26550759E 09         147.4383            15.9883             15.9890
    15        603820.5078      30286632.2500          50.0183             2.6469              2.6470
    16        605821.0000      30429172.2500          50.1840             1.4862              1.4862
    17        604850.2422      30323836.2500          50.1036             1.2440              1.2441
    18        604576.2578      30305418.2500          50.0809             1.5152              1.5152
    19        605465.5313      30378929.7500          50.1545             1.0007              1.0007
    20        605288.4375      30404189.0000          50.1399             2.1366              2.1367
    21        605487.5859      30382219.7500          50.1564             1.0443              1.0444
    22        606293.0703      30461882.2500          50.2231             0.9960              0.9960
    23        602867.0313      30210693.2500          49.9409             2.9060              2.9062
    24        605637.8594      30510195.0000          50.1688             3.2315              3.2317
    25        606085.0156      30456647.0000          50.2058             1.5130              1.5130
    26        606535.9766      30476601.0000          50.2432             0.4355              0.4355
    27        604545.4375      30330310.5000          50.0783             2.1479              2.1480
    28        606407.8672      30480593.0000          50.2326             1.2596              1.2597
    29        605586.9375      30392885.0000          50.1646             1.0717              1.0718
    30        600659.0313      30025669.5000          49.7564             3.3939              3.3940
    31        607524.5078      30692269.2500          50.3251             3.1336              3.1338
    32        611100.5234      31049093.2500          50.6213             3.0781              3.0783
    33        603339.2906      30171091.2500          49.9784             1.1918              1.1919
    34        603652.9453      30330780.2500          50.0044             3.4715              3.4717
    35        603160.5000      30266096.2500          49.9636             3.2820              3.2821
    36        603050.3281      30275121.5000          49.9545             3.5257              3.5259
    37        603757.3359      30202375.0000          50.0130             0.7416              0.7416
    38        605174.7109      31527291.5000          50.1304             9.9269              9.9273
    39        604714.2422      31478794.0000          50.0923             9.9171              9.9175
    40             0.0000            -0.0000           0.0000            -0.0000             -0.0000
    41        605084.9063      31537245.5000          50.1230            10.0057             10.0061
    42        603027.9922      31323857.7500          49.9525             9.9744              9.9746
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EMP-FACTOR ANALYSIS THIRD GRADE

CORRELATION MATRIX      ALL VARIABLES

                       1            2            3            4            5            6            7

   1            1.000000     0.208311     0.020036     0.058334     0.050450     0.069962     0.099850
   2            0.208311     1.000000     0.174861     0.185847     0.186752     0.120772     0.123585
   3            0.020036     0.174861     1.000000     0.292044     0.295152     0.232317     0.155405
   4            0.058346     0.186850     0.292046     1.000000     0.584536     0.113024     0.102296
   5            0.050461     0.186755     0.295154     0.584536     1.000000     0.110144     0.096680
   6            0.069979     0.120772     0.232317     0.113024     0.110144     1.000000     0.325952
   7            0.099850     0.123586     0.155402     0.102296     0.096675     0.325952     1.000000
   8            0.161934     0.089490     0.182465     0.065904     0.066071     0.166156     0.222795
   9            0.098417     0.072368     0.062182     0.072300     0.071379     0.048997     0.052734
  10            0.152366     0.103970     0.156836     0.105765     0.100624     0.077636     0.092963
  11            0.161161     0.097228     0.123024     0.087077     0.090195     0.061807     0.136735
  12            0.085130     0.119056     0.268142     0.071689     0.094869     0.166205     0.100895
  13            0.037251     0.125064     0.200909     0.138419     0.151560     0.115424     0.106480
  14            0.042526     0.097340     0.134818     0.065439     0.077450     0.093695     0.073904
  15            0.118833     0.132127     0.190934     0.141565     0.143832     0.092287     0.095046
  16            0.048112     0.067525     0.078732     0.083187     0.076461     0.060342     0.084435
  17            0.129375     0.175651     0.053921     0.076845     0.088401     0.118042     0.111425
  18            0.177848     0.100256     0.120746     0.087159     0.090995     0.085711     0.103792
  19            0.241727     0.103679     0.058163     0.076815     0.088047     0.089493     0.122882
  20            0.151888     0.121229     0.102759     0.110576     0.112015     0.103642     0.099989
  21            0.199060     0.037631     0.025493     0.069742     0.076121     0.094662     0.105390
  22            0.059606     0.043803     0.031714     0.058867     0.078760     0.120514     0.095928
  23            0.073336     0.152088     0.575774     0.228374     0.237091     0.202674     0.165141
  24            0.050786     0.146034     0.576435     0.214177     0.227905     0.183559     0.140137
  25            0.046192     0.110447     0.076411     0.122887     0.117042     0.045856     0.079758
  26            0.017321     0.044554    -0.044743     0.027281     0.010224    -0.008613     0.145407
  27            0.158852     0.234895     0.167519     0.108590     0.142061     0.109601     0.094092
  28            0.200495     0.110439     0.094280     0.125585     0.134622     0.076472     0.145765
  29            0.176616     0.080971     0.096913     0.083337     0.078078     0.069940     0.117930
  30            0.026550     0.150499     0.670657     0.263778     0.254247     0.229671     0.135437
  31            0.052342     0.149026     0.668793     0.261948     0.244004     0.220763     0.151979
  32            0.049342     0.160309     0.664453     0.261950     0.243136     0.202911     0.154395
  33            0.128795     0.077967     0.157250     0.092791     0.093128     0.058412     0.089445
  34            0.035844     0.200654     0.266616     0.205141     0.215371     0.140478     0.104416
  35            0.023429     0.209444     0.247878     0.211926     0.208311     0.128736     0.114735
  36            0.019193     0.184362     0.351484     0.215369     0.210979     0.228731     0.115364
  37            0.157830     0.083901     0.152577     0.084429     0.094921     0.046115     0.104291
  38           -0.013107     0.127945     0.299014     0.230639     0.252343     0.118970     0.107038
  39            0.069084     0.129174     0.287867     0.151900     0.185580     0.134383     0.108841
  40           -0.000000    -0.000000    -0.000000    -0.000000    -0.000000    -0.000000    -0.000000
  41            0.162350     0.245971     0.367594     0.222173     0.253866     0.181228     0.135764
  42           -0.005040     0.176898     0.352599     0.187476     0.229086     0.154942     0.130478
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EMP-FACTOR ANALYSIS THIRD GRADE

CORRELATION MATRIX       ALL VARIABLES

                    8              9             10             11             12             13             14

  1            0.161907       0.098417       0.152337       0.161161       0.085118       0.037251       0.042518
  2            0.089483       0.072368       0.103962       0.097228       0.119056       0.125061       0.097342
  3            0.182465       0.062182       0.156836       0.123024       0.268142       0.200909       0.134816
  4            0.065904       0.072305       0.105773       0.087077       0.071892       0.138419       0.065459
  5            0.066071       0.071379       0.100624       0.090203       0.094871       0.151560       0.077452
  6            0.166156       0.048997       0.077636       0.061607       0.166205       0.115424       0.093695
  7            0.222795       0.052734       0.092970       0.136735       0.100895       0.106476       0.073904
  8            1.000000       0.022011       0.107842       0.089847       0.100445       0.072900       0.058524
  9            0.022011       1.000000       0.041869       0.023713       0.087097       0.077143       0.056024
 10            0.107858       0.041869       1.000000       0.410957       0.117990       0.054834       0.046565
 11            0.089829       0.023700       0.410957       1.000000       0.102605       0.086108       0.061223
 12            0.100445       0.087097       0.117990       0.102605       1.000000       0.173369       0.146986
 13            0.072900       0.077143       0.054834       0.086108       0.173369       1.000000       0.569237
 14            0.058524       0.056024       0.046565       0.061223       0.146986       0.569237       1.000000
 15            0.056926       0.223926       0.032699       0.028441       0.174185       0.137809       0.131296
 16            0.070269       0.071334       0.044065       0.058588       0.111595       0.086387       0.060457
 17            0.044465       0.054616       0.124309       0.102435       0.061490       0.071370       0.055982
 18            0.101469       0.061736       0.101751       0.108919       0.071599       0.064025       0.062197
 19            0.115922       0.074248       0.119811       0.089045       0.085517       0.066051       0.066277
 20            0.096379       0.098246       0.079078       0.052209       0.105713       0.083742       0.049076
 21            0.070252       0.080464       0.120265       0.077670       0.063188       0.046772       0.046560
 22            0.068360       0.046009      -0.029776       0.030747       0.054528       0.068295       0.048151
 23            0.177845       0.048111       0.030156       0.032370       0.184536       0.182667       0.109207
 24            0.152084       0.061706       0.050972       0.037140       0.211051       0.164885       0.103031
 25            0.074937       0.050269       0.009147      -0.000329       0.142665       0.109122       0.105636
 26            0.057541      -0.078633      -0.023090       0.053343       0.034556       0.012565       0.032001
 27            0.111238       0.096662       0.094744       0.095876       0.150272       0.150207       0.098206
 28            0.136541       0.066881       0.078055       0.118821       0.118500       0.066767       0.073059
 29            0.102210       0.061862       0.086809       0.075899       0.092230       0.086847       0.054454
 30            0.162680       0.066212       0.034761       0.052792       0.238015       0.195938       0.122269
 31            0.173414       0.059940       0.053548       0.041673       0.217117       0.179173       0.113641
 32            0.158782       0.059952       0.049622       0.039679       0.226573       0.177088       0.128561
 33            0.115007       0.035479       0.106341       0.097552       0.100680       0.044229       0.033143
 34            0.099019       0.104090       0.101222       0.064379       0.233983       0.123752       0.100074
 35            0.057400       0.095343       0.098774       0.061759       0.218817       0.139457       0.124201
 36            0.122256       0.082360       0.068734       0.057978       0.240379       0.149244       0.117364
 37            0.107287       0.040044       0.093893       0.037177       0.085887       0.049795       0.045557
 38            0.091612       0.119077       0.100190       0.096506       0.177586       0.157069       0.130735
 39            0.105492       0.116325       0.055643       0.054185       0.226071       0.204424       0.152276
 40           -0.000000      -0.000000      -0.000000      -0.000000      -0.000000      -0.000000      -0.000000
 41            0.119853       0.153339       0.108402       0.087176       0.222602       0.200981       0.149870
 42            0.097131       0.129821       0.110229       0.077842       0.229811       0.190631       0.145865
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EMP-FACTOR ANALYSIS THIRD GRADE

CORRELATION MATRIX      ALL VARIABLES

              15          16          17          18          19          20          21

  1       0.118821    0.048112    0.129375    0.177827    0.241727    0.151873    0.199060
  2       0.132123    0.067519    0.175651    0.100251    0.103670    0.121224    0.037631
  3       0.190932    0.078729    0.053921    0.120743    0.058158    0.102756    0.025495
  4       0.141565    0.083187    0.076852    0.087159    0.076815    0.110576    0.069749
  5       0.143832    0.076461    0.088401    0.090995    0.088054    0.112015    0.076121
  6       0.092287    0.060342    0.118042    0.086711    0.089493    0.103637    0.094662
  7       0.095041    0.084426    0.111425    0.103792    0.122882    0.099983    0.105390
  8       0.056926    0.070269    0.044465    0.101469    0.115922    0.096371    0.070252
  9       0.223926    0.071334    0.054616    0.061736    0.074260    0.098246    0.080476
 10       0.032699    0.044065    0.124309    0.101751    0.119811    0.079078    0.120263
 11       0.028433    0.058588    0.102435    0.108919    0.089024    0.052209    0.077690
 12       0.174185    0.111595    0.061490    0.071599    0.085517    0.105709    0.063186
 13       0.137809    0.086387    0.071374    0.064025    0.066051    0.083742    0.046778
 14       0.131296    0.060457    0.055982    0.062193    0.066271    0.049078    0.046565
 15       1.000000    0.125024    0.031735    0.087138    0.082000    0.133708    0.108862
 16       0.125030    1.000000    0.035944    0.056458    0.086667    0.073904    0.083926
 17       0.031735    0.035944    1.000000    0.081368    0.152196    0.094773    0.082362
 18       0.087138    0.056449    0.081368    1.000000    0.142935    0.068019    0.064866
 19       0.082000    0.086667    0.152196    0.142935    1.000000    0.173289    0.107839
 20       0.133708    0.073911    0.094773    0.068019    0.173289    1.000000    0.179653
 21       0.108855    0.083913    0.082346    0.064875    0.107819    0.179643    1.000000
 22       0.082830    0.070431    0.011717    0.028064    0.030067    0.144305    0.644321
 23       0.168147    0.097816    0.046165    0.130897    0.050782    0.090487    0.065432
 24       0.187161    0.087068    0.007609    0.101563    0.063265    0.083394    0.044268
 25       0.153496    0.109257   -0.006161    0.055286    0.064643    0.075715    0.048337
 26       0.022671    0.034651    0.074459   -0.021341    0.092422    0.058242    0.031189
 27       0.131046    0.081684    0.124642    0.108776    0.105849    0.106114    0.095840
 28       0.108146    0.122650    0.060952    0.104809    0.135182    0.101442    0.114955
 29       0.072865    0.083252    0.101197    0.064825    0.101184    0.102486    0.107928
 30       0.191187    0.078058    0.021793    0.131972    0.051269    0.086031    0.023219
 31       0.181431    0.080735    0.037112    0.134706    0.081276    0.092628    0.032539
 32       0.187163    0.096135    0.028268    0.120554    0.070472    0.098492    0.037197
 33       0.084803    0.064843   -0.026832    0.073465    0.094895    0.060808    0.071779
 34       0.213683    0.080487    0.054670    0.074920    0.066587    0.111404    0.062022
 35       0.204272    0.081968    0.062484    0.067861    0.058396    0.108533    0.063855
 36       0.193185    0.075250    0.064553    0.090275    0.066215    0.110730    0.053752
 37       0.093724    0.114126    0.096655    0.114892    0.134781    0.074418    0.155566
 38       0.179491    0.110217    0.073428    0.088156    0.059112    0.124818    0.083797
 39       0.201344    0.112278    0.037094    0.116327    0.067862    0.136565    0.047470
 40      -0.000000   -0.000000   -0.000000   -0.000000   -0.000000   -0.000000   -0.000000
 41       0.277995    0.117206    0.096513    0.134053    0.111179    0.209907    0.077306
 42       0.217612    0.127913    0.088309    0.123722    0.088427    0.184171    0.081557
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EMP-FACTOR ANALYSIS THIRD GRADE

CORRELATION MATRIX      ALL VARIABLES

                      8            9            10           11           12           13           14

  1              0.161907     0.098417     0.152337     0.161161     0.085118     0.037251     0.042518
  2              0.089483     0.072368     0.103962     0.097228     0.119056     0.125061     0.09734
  3              0.182465     0.062182     0.156836     0.123024     0.268142     0.200909     0.134818
  4              0.065904     0.072305     0.105773     0.087077     0.071892     0.138419     0.065459
  5              0.066071     0.071379     0.100624     0.090203     0.094871     0.151560     0.077452
  6              0.166156     0.048997     0.077636     0.061807     0.166205     0.115424     0.093695
  7              0.222795     0.052734     0.092970     0.136735     0.100895     0.106476     0.073904
  8              1.000000     0.022011     0.107842     0.089847     0.100445     0.072900     0.058524
  9              0.022011     1.000000     0.041869     0.023713     0.087097     0.077143     0.056024
 10              0.107858     0.041869     1.000000     0.410957     0.117990     0.054834     0.046565
 11              0.089829     0.023700     0.410957     1.000000     0.102605     0.086108     0.061223
 12              0.100445     0.087097     0.117990     0.102605     1.000000     0.173369     0.146986
 13              0.072900     0.077143     0.054834     0.086108     0.173369     1.000000     0.569237
 14              0.058524     0.056024     0.046565     0.061223     0.146986     0.569237     1.000000
 15              0.056926     0.223926     0.032699     0.028441     0.174185     0.137809     0.131296
 16              0.070269     0.071334     0.044065     0.058588     0.111595     0.086387     0.060457
 17              0.044465     0.054616     0.124309     0.102435     0.061490     0.071370     0.055982
 18              0.101469     0.061736     0.101751     0.108919     0.071599     0.064025     0.062197
 19              0.115922     0.074248     0.119811     0.089045     0.085517     0.066051     0.066277
 20              0.096379     0.098246     0.079078     0.052209     0.105713     0.083742     0.049076
 21              0.070252     0.080464     0.120265     0.077670     0.063188     0.046772     0.046560
 22              0.068360     0.046009    -0.029776     0.030747     0.054528     0.068295     0.048151
 23              0.177845     0.048111     0.030156     0.032370     0.184536     0.182667     0.109207
 24              0.152084     0.061706     0.050972     0.037140     0.211051     0.164885     0.103031
 25              0.074937     0.050269     0.009147    -0.000329     0.142665     0.109122     0.105635
 26              0.057541    -0.078633    -0.023090     0.053343     0.034556     0.012565     0.032031
 27              0.111238     0.096662     0.094744     0.095876     0.150272     0.150207     0.098206
 28              0.136541     0.066881     0.078055     0.118821     0.116500     0.086767     0.073059
 29              0.102210     0.061862     0.086809     0.075899     0.092230     0.086847     0.054454
 30              0.162680     0.066212     0.034761     0.052792     0.238015     0.195938     0.122269
 31              0.173414     0.059940     0.053548     0.041673     0.217117     0.179173     0.113641
 32              0.158782     0.059952     0.049622     0.039679     0.226573     0.177088     0.128561
 33              0.115007     0.035479     0.106341     0.097552     0.100680     0.044229     0.033143
 34              0.099019     0.104090     0.101222     0.064379     0.233983     0.123752     0.100074
 35              0.057400     0.095343     0.098774     0.061759     0.218817     0.139457     0.124201
 36              0.122256     0.082360     0.068734     0.057978     0.240379     0.149244     0.117364
 37              0.107287     0.040044     0.093893     0.037177     0.085887     0.049795     0.045537
 38              0.091612     0.119077     0.100190     0.096506     0.177586     0.157069     0.130735
 39              0.105492     0.116325     0.055643     0.054185     0.226071     0.204424     0.132276
 40             -0.000000    -0.000000    -0.000000    -0.000000    -0.000000    -0.000000    -0.000000
 41              0.119853     0.153339     0.108402     0.087176     0.222602     0.200981     0.149870
 42              0.097131     0.129821     0.110229     0.077842     0.229811     0.190631     0.145865
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EMP-FACTOR ANALYSIS THIRD GRADE

CORRELATION MATRIX      ALL VARIABLES

              29          30          31          32          33          34          35

  1      0.176616    0.026541    0.052342    0.049342    0.128795    0.035844    0.023419
  2      0.080971    0.150499    0.149026    0.160306    0.077959    0.200651    0.209444
  3      0.096913    0.670656    0.668791    0.664453    0.157246    0.266616    0.247878
  4      0.083345    0.263778    0.261948    0.261950    0.092791    0.205141    0.211926
  5      0.078078    0.254247    0.244004    0.243136    0.093128    0.215371    0.208311
  6      0.069940    0.229671    0.220760    0.202911    0.058412    0.140478    0.128733
  7      0.117930    0.135433    0.151975    0.154390    0.089433    0.104412    0.114731
  8      0.102210    0.162675    0.173414    0.158782    0.115007    0.099019    0.057400
  9      0.061862    0.066212    0.059940    0.059956    0.035479    0.104090    0.095343
 10      0.086809    0.034761    0.053548    0.049622    0.106341    0.101222    0.098768
 11      0.075899    0.052786    0.041673    0.039679    0.097534    0.064379    0.061753
 12      0.092230    0.238013    0.217117    0.226573    0.100680    0.233983    0.218814
 13      0.086852    0.195938    0.179173    0.177088    0.044229    0.123752    0.139457
 14      0.054454    0.122269    0.113639    0.128561    0.033143    0.100074    0.124200
 15      0.072865    0.191185    0.181428    0.187163    0.084803    0.213683    0.204272
 16      0.083265    0.078058    0.080735    0.096133    0.064843    0.080467    0.081968
 17      0.101197    0.021798    0.037106    0.028268   -0.026846    0.054670    0.062484
 18      0.064838    0.131972    0.134706    0.120554    0.073465    0.074920    0.067861
 19      0.101184    0.051269    0.081276    0.070472    0.094895    0.066587    0.058396
 20      0.102495    0.086031    0.092628    0.098492    0.060808    0.111404    0.108533
 21      0.107909    0.023214    0.032533    0.037197    0.071762    0.062017    0.063847
 22      0.059486    0.032974    0.048924    0.055284    0.043286    0.053775    0.056381
 23      0.091057    0.597458    0.626124    0.600205    0.141705    0.201580    0.170736
 24      0.081586    0.589475    0.567322    0.564847    0.098610    0.200726    0.179250
 25      0.100832    0.099664    0.079903    0.095747    0.032192    0.200527    0.184851
 26      0.046099   -0.023090    0.000652    0.013934    0.016159    0.031011    0.032657
 27      0.107022    0.144300    0.141389    0.142479    0.088504    0.119584    0.125143
 28      0.163978    0.084455    0.082209    0.095426    0.100993    0.153326    0.136604
 29      1.000000    0.081259    0.075453    0.075959    0.094606    0.090268    0.082852
 30      0.081259    1.000000    0.817208    0.778901    0.123558    0.233965    0.212596
 31      0.075459   -0.817208    1.000000    0.786661    0.123716    0.210902    0.195847
 32      0.075959    0.778899    0.786659    1.000000    0.126054    0.217453    0.208056
 33      0.094606    0.123558    0.123716    0.126054    1.000000    0.155957    0.134236
 34      0.090268    0.233965    0.210902    0.217453    0.155957    1.000000    0.670949
 35      0.082852    0.212596    0.195849    0.208056    0.134236    0.670949    1.000000
 36      0.071408    0.310253    0.288059    0.284834    0.172115    0.[illegible]92795    0.395125
 37      0.146303    0.139923    0.163725    0.175295    0.136810    0.084870    0.062392
 38      0.063914    0.235611    0.226000    0.226729    0.107030    0.264820    0.257806
 39      0.100137    0.268913    0.245470    0.254442    0.097462    0.227471    0.200920
 40     -0.000000   -0.000000   -0.000000   -0.000000   -0.000000   -0.000000   -0.000000
 41      0.108943    0.310741    0.294583    0.300965    0.133567    0.322700    0.294223
 42      0.097572    0.307529    0.282144    0.286493    0.123852    0.277435    0.262427
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EMP-FACTOR ANALYSIS THIRD GRADE

CORRELATION MATRIX      ALL VARIABLES

                 22           23           24           25           26           27           28

  1        0.059606     0.073325     0.050786     0.046192     0.017248     0.158852     0.200495
  2        0.043812     0.152088     0.146032     0.110447     0.044554     0.234891     0.110439
  3        0.031714     0.575774     0.576435     0.076411    -0.044755     0.167517     0.094260
  4        0.058875     0.228377     0.214177     0.122887     0.027281     0.108594     0.125591
  5        0.078767     0.237091     0.227905     0.117047     0.010224     0.142061     0.134622
  6        0.120525     0.202674     0.183559     0.045849    -0.008613     0.109601     0.076472
  7        0.095942     0.165137     0.140137     0.079758     0.145375     0.094092     0.145765
  8        0.068378     0.177845     0.152084     0.074937     0.057541     0.111236     0.136541
  9        0.046022     0.048111     0.061706     0.050269    -0.078633     0.096662     0.066891
 10       -0.029776     0.030156     0.050972     0.009147    -0.023090     0.094744     0.078035
 11        0.030747     0.032370     0.037140    -0.000343     0.053543     0.095876     0.118821
 12        0.054528     0.184536     0.211051     0.142665     0.034556     0.150268     0.118500
 13        0.068301     0.182687     0.164887     0.109122     0.012565     0.150207     0.086707
 14        0.048151     0.109207     0.103031     0.105636     0.032001     0.098204     0.073059
 15        0.082838     0.168147     0.187161     0.153496     0.022671     0.131046     0.108146
 16        0.070445     0.097818     0.087068     0.109266     0.034651     0.081684     0.122661
 17        0.011734     0.046165     0.007609    -0.006161     0.074459     0.124834     0.060952
 18        0.028078     0.130897     0.101563     0.055286    -0.021341     0.108783     0.104809
 19        0.030067     0.050782     0.063271     0.064643     0.092422     0.105849     0.133132
 20        0.144314     0.090487     0.083394     0.075715     0.058242     0.106118     0.101449
 21        0.644321     0.065425     0.044261     0.048323     0.031144     0.095840     0.114953
 22        1.000000     0.047482     0.035615     0.037189    -0.022201     0.078860     0.086550
 23        0.047482     1.000000     0.505154     0.127614     0.015103     0.157406     0.112786
 24        0.035621     0.505154     1.000000     0.076148    -0.036742     0.152993     0.110478
 25        0.037203     0.127614     0.076148     1.000000     0.020566     0.094996     0.196283
 26       -0.022153     0.015119    -0.036742     0.020617     1.000000     0.051007     0.098982
 27        0.078869     0.157406     0.152996     0.094996     0.051007     1.000000     0.124875
 28        0.086550     0.112786     0.110478     0.196283     0.098982     0.124875     1.000000
 29        0.059486     0.091057     0.061586     0.100820     0.046055     0.107022     0.163976
 30        0.032980     0.597458     0.589475     0.099664    -0.023090     0.144300     0.084455
 31        0.048930     0.626124     0.567322     0.079903     0.000652     0.141369     0.082209
 32        0.055284     0.600205     0.564847     0.095742     0.013919     0.142476     0.095426
 33        0.043303     0.141705     0.096610     0.032192     0.016159     0.088504     0.100993
 34        0.053781     0.201577     0.200726     0.200527     0.030997     0.119584     0.153311
 35        0.056387     0.170736     0.179250     0.184851     0.032657     0.125143     0.156604
 36        0.067103     0.248823     0.272424     0.173515     0.038464     0.131657     0.123699
 37        0.002523     0.170849     0.137248     0.105460    -0.034175     0.115084     0.167510
 38        0.078940     0.190721     0.227789     0.127664     0.044960     0.141375     0.115144
 39        0.052300     0.240552     0.237964     0.144595     0.010055     0.180986     0.096319
 40       -0.000000    -0.000000    -0.000000    -0.000000    -0.000000    -0.000000    -0.000000
 41        0.084422     0.271553     0.301387     0.130494     0.023695     0.207992     0.124423
 42        0.089632     0.252089     0.288863     0.105548     0.032036     0.170843     0.119410
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EMP-FACTOR ANALYSIS THIRD GRADE

CORRELATION MATRIX ALL VARIABLES

	36	37	38	39	40	41	42
1	0.019184	0.157787	-0.013107	0.069081	-0.000000	0.162350	-0.005040
2	0.184359	0.083901	0.127945	0.129173	-0.000000	0.245971	0.176896
3	0.351483	0.152577	0.299014	0.287867	-0.000000	0.367594	0.352599
4	0.215369	0.084440	0.230640	0.151901	-0.000000	0.222173	0.187476
5	0.210979	0.094931	0.252343	0.185580	-0.000000	0.253866	0.229086
6	0.228731	0.046115	0.118970	0.134383	-0.000000	0.181229	0.154942
7	0.115360	0.104272	0.107038	0.108840	-0.000000	0.135762	0.130478
8	0.122256	0.107287	0.091612	0.105492	-0.000000	0.119853	0.097131
9	0.082360	0.040061	0.119077	0.116326	-0.000000	0.153359	0.129821
10	0.068734	0.093893	0.100191	0.055643	-0.000000	0.108402	0.110229
11	0.057978	0.037177	0.096506	0.054185	-0.000000	0.087176	0.077842
12	0.240377	0.085887	0.177586	0.226071	-0.000000	0.222602	0.229810
13	0.149244	0.049795	0.157069	0.204424	-0.000000	0.200982	0.190631
14	0.117384	0.045557	0.130753	0.152276	-0.000000	0.149870	0.145885
15	0.193185	0.093724	0.179491	0.201344	-0.000000	0.277995	0.217612
16	0.075250	0.114145	0.110217	0.112278	-0.000000	0.117209	0.127915
17	0.064553	0.096655	0.073428	0.037094	-0.000000	0.096513	0.088309
18	0.090275	0.114910	0.088156	0.116327	-0.000000	0.134053	0.123724
19	0.066215	0.134809	0.059114	0.067862	-0.000000	0.111179	0.088427
20	0.110730	0.074431	0.124819	0.136565	-0.000000	0.209907	0.184172
21	0.053752	0.155566	0.083795	0.047468	-0.000000	0.077304	0.081557
22	0.067097	0.002523	0.078940	0.052300	-0.000000	0.084420	0.099632
23	0.248823	0.170849	0.190722	0.240552	-0.000000	0.271553	0.252090
24	0.272424	0.137248	0.227789	0.237965	-0.000000	0.301387	0.288865
25	0.173515	0.105479	0.127664	0.144595	-0.000000	0.130494	0.105548
26	0.038464	-0.034111	0.044964	0.010060	-0.000000	0.023695	0.032036
27	0.131654	0.115084	0.141375	0.180986	-0.000000	0.207992	0.170844
28	0.123699	0.167510	0.115146	0.096319	-0.000000	0.124423	0.119410
29	0.071408	0.146303	0.063915	0.100137	-0.000000	0.108943	0.097572
30	0.310253	0.139923	0.235611	0.268913	-0.000000	0.310742	0.307529
31	0.288059	0.163725	0.226000	0.245470	-0.000000	0.294584	0.282144
32	0.284834	0.175295	0.226729	0.254442	-0.000000	0.300965	0.286495
33	0.172115	0.136833	0.107030	0.097462	-0.000000	0.133567	0.123855
34	0.492795	0.084870	0.264820	0.227471	-0.000000	0.322700	0.277435
35	0.395125	0.062392	0.257807	0.200920	-0.000000	0.294224	0.262427
36	1.000000	0.075186	0.280812	0.235858	-0.000000	0.341926	0.304948
37	0.075186	1.000000	0.071385	0.070648	-0.000000	0.083879	0.075648
38	0.280812	0.071383	1.000000	0.371331	-0.000000	0.465592	0.462596
39	0.235858	0.070648	0.371331	1.000000	-0.000000	0.446883	0.460395
40	-0.000000	-0.000000	-0.000000	-0.000000	0.000000	-0.000000	-0.000000
41	0.341926	0.083879	0.465592	0.446883	-0.000000	1.000000	0.594086
42	0.304948	0.075648	0.462596	0.460395	-0.000000	0.594086	1.000000

Means, Standard Deviations and Intercorrelations of Items from the First Grade Student Questionnaire

The variable numbers, titles and questionnaire numbers (Q#) for the first grade student variables on the following pages are:

1 Sex (Q 1)

2 Age (Q 2)

3 Place of Birth (Q 3)

4 Racial-Ethnic Differences (or Group Membership) (Q 4+)

5 Number of Persons Living in Home (Q 7)

6 Number of Siblings Under 18 (Q 8)

7 Who Acts as Father (Q 9)

8 Who Acts as Mother (Q 10)

9 Father's Educational Level (Q 11)

10 Father's Occupational Level (Q 12)

11 Place of Mother's Birth (Q 13)

12 Mother's Educational Level (Q 14)

13 Mother's Work (Q 15)

14 Parents Speak a Foreign Language at Home (Q 16)

15 Student Speaks a Foreign Language Outside of School (Q 17)

16 Appliances in the Home (Q's 18-21, 24, 25)

17 Reading Materials in the Home (Q's 22, 23, 26)

18 Kindergarten Attendance (Q 27)

19 Nursery School Attendance (Q 28)

20 Attendance at Project Head Start (Q 29)

21 Repeat First Grade (Q 30)

22	Closer Public School (Q 31)
23	Gets Along Well With Classmates (Q 32)
24	Avoids Disturbing Classmates (Q 33)
25	Arrives School on Time (Q 34)
26	Shows Desire to Learn (Q 35)
27	Shows Good Speaking Vocabulary (Q 36)
28	Pays Attention in Class (Q 37)
29	Moves From Activity to Activity Progressively (Q 38)
30	Assumes Responsibility (Q 39)
31	Verbal Score
32	Non-Verbal Score

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EMP-FACTOR ANALYSIS FIRST GRADE

ALL VARIABLES

THE NUMBER OF OBSERVATIONS IS       6890.

VARIABLE        SUMS           SUMS OF SQUARES           MEAN             SIGMA(N)          SIGMA(N-1)
    1       344262.9531       17203961.2500           49.9656            0.6211             0.6212
    2       344089.8359       17188914.2500           49.9405            0.8439             0.8439
    3       344210.4297       17201527.5000           49.9580            0.8912             0.8913
    4       341330.5352       17034018.2500           49.5400            4.2510             4.2513
    5       344925.7234       17299856.0000           50.0618            2.1644             2.1646
    6       345018.5781       17311493.5000           50.0753            2.2408             2.2410
    7       344334.7505       17224899.7500           49.9760            1.5439             1.5440
    8       344606.7617       17239886.7500           50.0155            0.7816             0.7817
    9       343406.9154       17172593.0000           49.8413            2.8696             2.8699
   10       343421.3320       17186014.0000           49.8434            3.1580             3.1582
   11       344477.1875       17225603.0000           49.9967            0.6470             0.6471
   12       343517.8750       17181573.5000           49.8575            2.8162             2.8165
   13       344862.6484       17266104.5000           50.0526            0.8365             0.8365
   14       344612.3047       17241172.7500           50.0163            0.8468             0.8469
   15       344682.6555       17249720.5000           50.0265            0.9561             0.9561
   16      1924233.5675       0.56862814E 09         279.2792           67.3247            67.3296
   17       961905.7500       0.14293059E 09         139.6090           35.4116            35.4142
   18       345066.5992       17317084.2500           50.0822            2.2657             2.2658
   19       344808.1523       17260169.0000           50.0447            0.7937             0.7937
   20       344569.7266       17233663.2500           50.0101            1.7743             1.7744
   21       344470.8516       17222529.0000           49.9958            0.2539             0.2539
   22       344716.7773       17248047.7500           50.0315            0.4449             0.4449
   23       344404.8125       17226089.0000           49.9862            1.2407             1.2408
   24       344404.4687       17236934.2500           49.9861            1.7679             1.7680
   25       344314.4922       17218572.5000           49.9731            1.3262             1.3263
   26       344124.5195       17246023.5000           49.9455            2.9153             2.9155
   27       343663.9453       17235677.0000           49.8787            3.6972             3.6975
   28       344289.1016       17265342.2500           49.9694            2.9858             2.9861
   29       343957.2500       17253434.2500           49.9212            3.4638             3.4641
   30       344238.1563       17248119.2500           49.9620            2.6748             2.6750
   31       345762.0039       17994153.5000           50.1832            9.6583             9.6590
   32       347740.4844       18172434.2500           50.4703            9.5003             9.5010
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EMP-FACTOR ANALYSIS FIRST GRADE

CORRELATION MATRIX       ALL VARIABLES

                    1           2           3           4           5           6           7

   1         1.000000    0.033642    0.039403    0.009908    0.019270    0.022341    0.055431
   2         0.033642    1.000000    0.077479    0.036210    0.060350    0.044113    0.053387
   3         0.039403    0.077479    1.000000    0.205849    0.107837    0.115624    0.064527
   4         0.009908    0.036210    0.205849    1.000000    0.282724    0.282865    0.225505
   5         0.019270    0.060350    0.107837    0.282724    1.000000    0.396356    0.063054
   6         0.022341    0.044113    0.115624    0.282865    0.396356    1.000000    0.068749
   7         0.055431    0.053387    0.064527    0.225505    0.063054    0.068749    1.000000
   8         0.148503    0.042193    0.159545    0.095576    0.047207    0.034825    0.335441
   9         0.010173    0.022040    0.134737    0.281447    0.219981    0.224103    0.144566
  10        -0.014317    0.024837    0.165487    0.367536    0.208002    0.203489    0.288565
  11         0.097416    0.025282    0.279562    0.098570    0.078453    0.071623    0.055174
  12         0.003920    0.012836    0.107352    0.265680    0.210877    0.215904    0.121404
  13         0.086175    0.070214    0.102160    0.164204    0.042307    0.011518    0.248676
  14         0.123064    0.009952    0.152305    0.090090    0.069241    0.067345    0.030944
  15         0.045355   -0.004050    0.144631    0.093645    0.086932    0.080335    0.018270
  16         0.007164   -0.005927    0.024795    0.127476    0.052184    0.045991    0.038685
  17         0.003431   -0.009301    0.006714    0.077730    0.023974    0.025965    0.035538
  18         0.042387    0.001613    0.063193    0.116004    0.146681    0.138377    0.054531
  19        -0.006351    0.056124    0.089613    0.034027    0.136700    0.133263    0.048947
  20         0.032430   -0.020719    0.129595    0.256142    0.157086    0.141164    0.071792
  21         0.095012    0.055878    0.219655    0.005488    0.084703    0.069189    0.106900
  22         0.014706   -0.041654    0.142115    0.150511    0.065025    0.083019    0.101478
  23         0.144587    0.080189    0.075601    0.073004    0.063908    0.038055    0.152860
  24         0.154045    0.053627    0.060543    0.061911    0.058308    0.045851    0.135169
  25         0.034797    0.024542    0.077451    0.134557    0.077713    0.077725    0.147412
  26         0.083639    0.031385    0.023378    0.097923    0.095303    0.089181    0.085187
  27         0.070200    0.049646    0.081597    0.195232    0.169781    0.161333    0.088840
  28         0.127442    0.065017    0.025575    0.082505    0.073539    0.065478    0.128582
  29         0.128323    0.054419    0.043124    0.128561    0.100823    0.095013    0.109502
  30         0.096050    0.028790    0.008767    0.076986    0.072734    0.056378    0.110041
  31         0.073987    0.095495    0.099586    0.339433    0.185721    0.185371    0.106253
  32         0.074377    0.084352    0.103599    0.380183    0.179848    0.180756    0.134621
```

EMP-FACTOR ANALYSIS FIRST GRADE

CORRELATION MATRIX ALL VARIABLES

	8	9	10	11	12	13	14
1	0.146803	0.010178	-0.014817	0.097416	0.003920	0.086176	0.122995
2	0.042193	0.022040	0.024807	0.025319	0.012901	0.070214	0.009952
3	0.159745	0.134737	0.165487	0.279552	0.107367	0.102160	0.152305
4	0.095945	0.281447	0.367534	0.098570	0.266680	0.164204	0.090090
5	0.047207	0.219975	0.208002	0.078453	0.210877	0.042487	0.089241
6	0.034825	0.224100	0.203484	0.071623	0.215904	0.011518	0.067345
7	0.335471	0.144558	0.288565	0.055174	0.121404	0.248676	0.030944
8	1.000000	0.079510	0.122496	0.145287	0.086391	0.319107	0.133539
9	0.079510	1.000000	0.446079	0.119225	0.642625	0.066858	0.080345
10	0.122496	0.446079	1.000000	0.102995	0.344937	0.139665	0.054258
11	0.145287	0.119226	0.102977	1.000000	0.115333	0.133142	0.281374
12	0.086391	0.642625	0.344937	0.115333	1.000000	0.011844	0.087513
13	0.319107	0.066858	0.139665	0.133142	0.011844	1.000000	0.054552
14	0.133539	0.080345	0.054258	0.281440	0.087513	0.054552	1.000000
15	0.063141	0.092115	0.073976	0.285012	0.115533	0.018948	0.669311
16	0.028712	0.092164	0.105090	0.068829	0.092433	0.016741	-0.003806
17	0.015204	0.099745	0.085023	0.070911	0.100338	-0.000537	-0.000854
18	0.128295	0.222846	0.158238	0.035612	0.212747	0.063793	0.035667
19	0.142715	0.178077	0.156231	0.112484	0.147932	-0.006012	0.066834
20	0.070120	0.137169	0.124095	0.065709	0.134069	0.071950	0.070419
21	0.395623	0.077133	0.058235	0.322215	0.050435	0.054323	0.317401
22	0.154847	0.069460	0.054751	0.136258	0.051319	0.099157	0.098138
23	0.120967	0.082230	0.087289	0.095451	0.064859	0.084955	0.060917
24	0.109446	0.082049	0.103979	0.079999	0.077773	0.075546	0.067449
25	0.100659	0.077826	0.095021	0.027442	0.072093	0.017793	0.053566
26	0.041609	0.116302	0.140975	0.048340	0.125195	0.034758	0.021473
27	0.080036	0.205953	0.216470	0.074898	0.204995	0.031490	0.093512
28	0.072700	0.123451	0.142980	0.058298	0.126301	0.061844	0.053210
29	0.099761	0.158195	0.173712	0.053944	0.151335	0.049052	0.047068
30	0.056079	0.112539	0.128224	0.026249	0.111481	0.055041	-0.001842
31	0.050069	0.248823	0.274873	0.080886	0.247397	0.052951	0.102869
32	0.065126	0.266243	0.303369	0.061277	0.254355	0.068219	0.013178

```
EMP-FACTOR ANALYSIS FIRST GRADE

CORRELATION MATRIX       ALL VARIABLES

                    15             16             17             18             19             20             21

   1            0.043355       0.007164       0.003431       0.042387      -0.006551       0.032397       0.095012
   2           -0.004050      -0.005927      -0.009303       0.001613       0.056124      -0.020719       0.055878
   3            0.144621       0.024796       0.006712       0.063198       0.089613       0.129598       0.219496
   4            0.093645       0.127475       0.077730       0.116001       0.034027       0.256138       0.006454
   5            0.088915       0.052183       0.023973       0.146681       0.136700       0.137077       0.034637
   6            0.080335       0.045991       0.025965       0.138377       0.133283       0.141164       0.069189
   7            0.018270       0.038684       0.035537       0.054531       0.048977       0.071792       0.106900
   8            0.063141       0.028709       0.015202       0.128285       0.142774       0.070120       0.395623
   9            0.092115       0.092163       0.099745       0.222846       0.178093       0.137162       0.077133
  10            0.073976       0.105090       0.085023       0.158243       0.156245       0.124095       0.058235
  11            0.284954       0.068825       0.070908       0.033612       0.112555       0.065709       0.321995
  12            0.115533       0.092433       0.100328       0.212747       0.147932       0.134069       0.050435
  13            0.018948       0.016739      -0.000539       0.063793      -0.006012       0.071950       0.054323
  14            0.669311      -0.003808      -0.000854       0.035667       0.066834       0.070419       0.317401
  15            1.000000       0.021485       0.021599       0.014638      -0.002792       0.059970       0.242280
  16            0.021485       1.000000       0.887290       0.034710       0.045580       0.049491       0.009984
  17            0.021599       0.887290       1.000000       0.015070       0.040530       0.023170       0.010718
  18            0.014638       0.034709       0.015070       1.000000       0.215560       0.228559       0.106461
  19           -0.002792       0.045578       0.040527       0.215560       1.000000       0.048131       0.187782
  20            0.059970       0.049491       0.023170       0.228559       0.048157       1.000000       0.060403
  21            0.242280       0.009976       0.010718       0.106461       0.187782       0.060403       1.000000
  22            0.075219       0.026256       0.028683       0.110475      -0.023429       0.133165       0.473752
  23            0.032329       0.034284       0.027172       0.048364       0.036993       0.031333       0.232296
  24            0.023709       0.023054       0.031072       0.032847       0.072121       0.030943       0.169657
  25           -0.013254       0.038233       0.033843       0.031662       0.033161       0.030115       0.012606
  26            0.014561       0.040147       0.039932       0.086220       0.062021       0.014703       0.071367
  27            0.081228       0.064997       0.055963       0.141398       0.052889       0.060274       0.007498
  28            0.020856       0.039979       0.047470       0.089283       0.056743       0.006472       0.092939
  29            0.031229       0.048137       0.048695       0.126401       0.071601       0.029289       0.083456
  30           -0.021849       0.037910       0.037009       0.097318       0.038200       0.001300       0.019660
  31            0.100383       0.082040       0.075499       0.166438       0.075407       0.118638       0.017650
  32            0.018972       0.075373       0.060355       0.217246       0.084400       0.159436       0.017162
```

```
EMP-FACTOR ANALYSIS FIRST GRADE

CORRELATION MATRIX       ALL VARIABLES
                  22          23          24          25          26          27          28

     1      0.014706    0.144587    0.154045    0.034797    0.083639    0.070200    0.127442
     2     -0.041654    0.080189    0.053627    0.024542    0.031385    0.049646    0.065017
     3      0.142115    0.075601    0.060543    0.077451    0.023378    0.081597    0.023575
     4      0.150311    0.073004    0.061911    0.134557    0.097923    0.196232    0.082505
     5      0.068025    0.063906    0.058303    0.077713    0.095498    0.169776    0.073533
     6      0.083019    0.053055    0.045851    0.077725    0.089181    0.161333    0.065478
     7      0.101478    0.152860    0.135169    0.147472    0.085187    0.088840    0.123582
     8      0.134647    0.121000    0.109472    0.100669    0.041609    0.030336    0.072700
     9      0.069460    0.082240    0.082049    0.077826    0.116303    0.205953    0.123451
    10      0.054751    0.087289    0.103979    0.095021    0.140975    0.216470    0.142980
    11      0.136132    0.093451    0.079999    0.027442    0.048360    0.074898    0.058298
    12      0.051519    0.064839    0.077775    0.072093    0.125195    0.204996    0.126301
    13      0.099157    0.034955    0.075546    0.017760    0.034758    0.031490    0.061844
    14      0.048133    0.060917    0.067449    0.053566    0.021473    0.093512    0.053210
    15      0.075219    0.032329    0.023709   -0.013254    0.014674    0.081228    0.020868
    16      0.026253    0.054286    0.023055    0.038334    0.040147    0.064997    0.039960
    17      0.028687    0.027173    0.031073    0.033845    0.039932    0.055963    0.047470
    18      0.110475    0.048377    0.032856    0.031662    0.086220    0.141388    0.089283
    19     -0.023429    0.036993    0.072121    0.033161    0.062021    0.062877    0.056743
    20      0.135165    0.021349    0.030955    0.030130    0.014703    0.060274    0.006479
    21      0.473752    0.232296    0.169657    0.012606    0.071367    0.007498    0.092987
    22      1.000000    0.084598    0.027495   -0.057867   -0.009568    0.029890   -0.020322
    23      0.084592    1.000000    0.398507    0.262666    0.315487    0.215566    0.336708
    24      0.027449    0.398507    1.000000    0.217368    0.385993    0.238020    0.519508
    25     -0.057867    0.262689    0.217368    1.000000    0.258935    0.214458    0.248187
    26     -0.009596    0.315487    0.385993    0.258935    1.000000    0.441113    0.630493
    27      0.029890    0.215566    0.238026    0.214458    0.441113    1.000000    0.432031
    28     -0.020322    0.336708    0.519508    0.248187    0.630493    0.432031    1.000000
    29      0.020649    0.309181    0.442948    0.215795    0.561649    0.459325    0.680254
    30     -0.025657    0.345563    0.419717    0.207895    0.507397    0.389878    0.582893
    31      0.046207    0.118614    0.155867    0.125443    0.255414    0.311103    0.260522
    32      0.058436    0.144131    0.167840    0.130706    0.278228    0.320248    0.296867
```

```
EMP-FACTOR ANALYSIS FIRST GRADE

CORRELATION MATRIX      ALL VARIABLES

                   29            30            31            32

       1        0.126523      0.096050      0.035987      0.074577
       2        0.054419      0.028790      0.095495      0.084352
       3        0.043112      0.008752      0.099585      0.103604
       4        0.128661      0.076981      0.339435      0.380183
       5        0.100623      0.072727      0.185719      0.179648
       6        0.095013      0.056378      0.185371      0.180768
       7        0.109502      0.110041      0.106253      0.134624
       8        0.093751      0.056076      0.050069      0.065131
       9        0.158196      0.112359      0.243823      0.255243
      10        0.173716      0.128228      0.274873      0.308670
      11        0.053944      0.026228      0.080886      0.061277
      12        0.151535      0.111481      0.247395      0.254355
      13        0.049052      0.055041      0.052945      0.068219
      14        0.047068     -0.001842      0.102869      0.013183
      15        0.031228     -0.021849      0.100383      0.018975
      16        0.048137      0.037910      0.082040      0.073375
      17        0.048595      0.037009      0.075499      0.060355
      18        0.126401      0.097518      0.166438      0.217248
      19        0.071501      0.038183      0.075403      0.084400
      20        0.029295      0.001300      0.118638      0.159438
      21        0.083455      0.019660      0.017650      0.017162
      22        0.020549     -0.023857      0.046207      0.058445
      23        0.309181      0.345492      0.118614      0.144151
      24        0.442948      0.418717      0.155867      0.167840
      25        0.215795      0.207895      0.125445      0.130706
      26        0.561649      0.507393      0.255414      0.278228
      27        0.459325      0.389676      0.311103      0.320249
      28        0.680254      0.582891      0.260522      0.296867
      29        1.000000      0.629737      0.282093      0.334794
      30        0.629737      1.000000      0.236902      0.272910
      31        0.282093      0.236902      1.000000      0.629407
      32        0.334794      0.272910      0.629407      1.000000
```

APPENDIX V

Mean, Standard Deviations and Intercorrelations of Indices and Selected Variables From the Student Questionnaires*

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*The records of those students who did not give a response for their age and/or sex have been eliminated from all these computations. Due to an error the inflated value for the first grade is one-half the amount it should be viz. it should be 3,413,024 rather than 1,706,512. The index means are slightly negative for grades 3-12 because the sample means from Appendix IV were used in the standardizing operation. These sample means were slightly larger than the expected value of 50 due to the elimination of students who had a smudged or double response (see Appendix IV) and consequently their use tended to subtract out slightly more than the required amount to bring the index means identically to zero.

TWELFTH GRADE

1*	I	Expectations
2	II	Socio-Economic Status
3	III	Social Confidence
4	IV	Attitude Toward Life
5	V	Family Structure and Stability
6	VI	Educational Desires and Plans
7	VII	Study Habits
8	VIII	Achievement Composite
9	1**	Sex
10	2	Age
11	5	Racial-Ethnic Differences
12	6	Number of Persons in the Home
13	8	Number of Older Siblings
14	9	Number of Siblings Dropped Out High School
15	10	Foreign Language Spoken by Parents
16	11	Foreign Language Spoken by Student
17	25	PTA Attendance
18	29	Attended Kindergarten
19	30	Infrequent Change in Schools
20	39	Few Voluntary Absences

*These numbers represent the order of the variables for the twelfth grade students as they appear on the following sheets.

**These numbers indicate the variables as they appear in the list of variables for the ninth and twelfth grades in Appendix IV.

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EDUCATIONAL MODELS PROJECT
 12TH GRADE STUDENTS CORRELATION MATRIX

TOTAL SAMPLE


THE NUMBER OF OBSERVATIONS IS     2223579.

VARIABLE         SUMS          SUMS OF SQUARES             MEAN            SIGMA(N)          SIGMA(N-1)
    1       -331582.6523       11349295.1250             -0.1491            2.2543              2.2543
    2       -273359.5859       10717283.0000             -0.1229            2.1920              2.1920
    3      -4744234.3750      0.15438085E 09             -2.1336            8.0546              8.0546
    4      -2237737.3438       48873303.0000             -1.0064            4.5790              4.5790
    5       -378682.7891        9795762.7500             -0.1703            2.0920              2.0920
    6       -474080.2383       23128398.0000             -0.2132            3.2181              3.2181
    7       -766688.5859       18098265.0000             -0.3448            2.8320              2.8320
    8          8280.6709       29595743.5000              0.0037            3.6483              3.6483
    9       -123396.6582        2802031.5313             -0.0555            1.1212              1.1212
   10        -41743.1216        2320425.1563             -0.0188            1.0214              1.0214
   11        -38226.0518        2268144.8750             -0.0172            1.0098              1.0098
   12        -61747.3706        2350849.9063             -0.0278            1.0278              1.0278
   13        -63558.8115        2373786.1250             -0.0286            1.0328              1.0328
   14        -27559.4756        2236454.5000             -0.0124            1.0028              1.0028
   15       -109983.0850        2791154.0938             -0.0495            1.1193              1.1193
   16        -78402.0586        2524696.5313             -0.0353            1.0650              1.0650
   17       -151546.3906        2987420.4688             -0.0682            1.1571              1.1571
   18        -96347.1582        2612448.5625             -0.0433            1.0831              1.0831
   19       -303677.6250        6672188.8125             -0.1366            1.7268              1.7268
   20         -1698.0442        2214453.1875             -0.0008            0.9979              0.9979
```

```
EDUCATIONAL MODELS PROJECT
 12TH GRADE STUDENTS CORRELATION MATRIX

CORRELATION MATRIX       TOTAL SAMPLE

                    1            2            3            4            5            6            7

  1          1.000000     0.260441     0.181465     0.279822     0.180686     0.510909     0.340804
  2          0.260441     1.000000     0.215951     0.288226     0.360208     0.476083     0.340248
  3          0.181465     0.215951     1.000000     0.844410     0.247303     0.220942     0.405631
  4          0.279822     0.288226     0.844410     1.000000     0.259675     0.331819     0.404168
  5          0.180686     0.360208     0.247303     0.259675     1.000000     0.202917     0.379536
  6          0.510909     0.476083     0.220942     0.331819     0.202917     1.000000     0.347086
  7          0.340804     0.340248     0.405631     0.404168     0.379536     0.347086     1.000000
  8          0.352663     0.478198     0.253595     0.419675     0.225854     0.486795     0.229718
  9          0.077507     0.131274     0.091044     0.054274     0.200206     0.164131     0.138725
 10          0.198986     0.246273     0.177539     0.224479     0.205379     0.227144     0.201993
 11         -0.002552     0.350238     0.242422     0.276961     0.270351     0.064185     0.129007
 12          0.085632     0.339969     0.123803     0.150593     0.171365     0.144648     0.174557
 13          0.121096     0.439988     0.110294     0.144379     0.229580     0.192082     0.181671
 14          0.142695     0.414711     0.102383     0.150071     0.216568     0.228819     0.162082
 15          0.126339     0.180398     0.128735     0.156300     0.216795     0.101014     0.244633
 16          0.138655     0.207588     0.127751     0.138482     0.176748     0.156021     0.227814
 17          0.162929     0.198608     0.173058     0.179917     0.218600     0.182101     0.312192
 18          0.066746     0.344612     0.165840     0.159066     0.182548     0.184414     0.255173
 19          0.132411     0.201007     0.291008     0.252813     0.342984     0.141368     0.506278
 20          0.196093     0.153146     0.078683     0.094115     0.035883     0.286028     0.167523


                    8            9           10           11           12           13           14

  1          0.352663     0.077507     0.198986    -0.002552     0.085632     0.121096     0.142695
  2          0.478198     0.131274     0.246273     0.350238     0.339969     0.439988     0.414711
  3          0.253595     0.091044     0.177539     0.242422     0.123803     0.110294     0.102383
  4          0.419675     0.054274     0.224479     0.276961     0.150593     0.144379     0.150071
  5          0.225854     0.200206     0.205379     0.270351     0.171365     0.229580     0.216568
  6          0.486795     0.164131     0.227144     0.064185     0.144648     0.192082     0.228819
  7          0.229718     0.138725     0.201993     0.129007     0.174557     0.181671     0.162082
  8          1.000000     0.073988     0.288392     0.447531     0.196711     0.240850     0.262068
  9          0.073988     1.000000    -0.019726     0.057099     0.106387     0.099035     0.077634
 10          0.288392    -0.019726     1.000000     0.159978     0.136740     0.142302     0.170199
 11          0.447531     0.057099     0.159978     1.000000     0.275329     0.219744     0.211655
 12          0.196711     0.106387     0.136740     0.275329     1.000000     0.216010     0.174205
 13          0.240850     0.099035     0.142302     0.219744     0.216010     1.000000     0.669956
 14          0.262068     0.077634     0.170199     0.211655     0.174205     0.669956     1.000000
 15          0.138500     0.147082     0.142818     0.103748     0.134383     0.116426     0.097256
 16          0.144215     0.120216     0.140927     0.080282     0.112942     0.107932     0.103798
 17          0.138297     0.067003     0.098042     0.074797     0.077534     0.099742     0.098374
 18          0.194676     0.129332     0.111438     0.117834     0.138384     0.183949     0.162251
 19          0.095987     0.248668     0.135102     0.105787     0.130790     0.120291     0.084414
 20          0.065158     0.068051     0.041879    -0.079697     0.006465     0.028879     0.053888
```

```
EDUCATIONAL MODELS PROJECT
 12TH GRADE STUDENTS CORRELATION MATRIX

CORRELATION MATRIX      TOTAL SAMPLE

                  15             16             17             18             19             20

   1           0.126339       0.138655       0.162929       0.066746       0.132411       0.196093
   2           0.180398       0.207588       0.198608       0.344612       0.201007       0.153146
   3           0.128735       0.127751       0.173058       0.165840       0.291008       0.078683
   4           0.156300       0.138482       0.179917       0.159066       0.252813       0.094115
   5           0.216795       0.176748       0.218600       0.182548       0.342984       0.035883
   6           0.101014       0.156021       0.182101       0.184414       0.141368       0.286028
   7           0.244633       0.227814       0.312192       0.255173       0.506278       0.167523
   8           0.138500       0.144215       0.138297       0.194676       0.095987       0.065158
   9           0.147082       0.120216       0.067003       0.129332       0.248668       0.068051
  10           0.142818       0.140927       0.098042       0.111438       0.135102       0.041879
  11           0.103748       0.080282       0.074797       0.117834       0.105787      -0.079697
  12           0.134383       0.112942       0.077534       0.138384       0.130790       0.006465
  13           0.116426       0.107932       0.099742       0.183949       0.120291       0.028879
  14           0.097256       0.103798       0.098374       0.162251       0.084414       0.053888
  15           1.000000       0.197939       0.112169       0.063581       0.225251      -0.009416
  16           0.197939       1.000000       0.113698       0.134210       0.194830       0.076521
  17           0.112169       0.113698       1.000000       0.120037       0.233909       0.097702
  18           0.063581       0.134210       0.120037       1.000000       0.260843       0.070977
  19           0.225251       0.194830       0.233909       0.260843       1.000000       0.059533
  20          -0.009416       0.076521       0.097702       0.070977       0.059533       1.000000
```

THIRD GRADE

1*	II	Socio-Economic Status
2	V	Family Structure and Stability
3	I	Expectations for Excellence
4	VII	Study Habits
5	VI	Educational Plans and Desires
6	IV	Attitude Toward Life
7	VIII	Achievement
8	1**	Sex
9	2	Age
10	3	Racial-Ethnic Differences
11	4	Number of Persons Living in Home
12	10	Parents Speak a Foreign Language at Home
13	11	Student Speaks a Foreign Language Outside of School
14	18	Go to Another School
15	23	Non-White Teacher Last Year
16	24	Number White Friends
17	25	A Kindergarten Attendance
18	26	Nursery School Attendance
19	27	Grade Last Year
20	28	Time to Get to School
21	29	Mode of Travel to School

*These numbers represent the order of the variables for third grade students as they appear on the following sheets.

**These numbers indicate the variables as they appear in the list of of variables for the third grade in Appendix IV.

22	30	Number White Classmates
23	31	Number White Classmates Last Year
24	32	Number White Friends
25	33	Place of Birth
26	37	Closer Public School

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EDUCATIONAL MODELS PROJECT
   THIRD GRADE

TOTAL SAMPLE


THE NUMBER OF OBSERVATIONS IS    2967052.

VARIABLE        SUMS          SUMS OF SQUARES          MEAN           SIGMA(N)         SIGMA(N-1)
    1        -55610.8740       15797997.8750          -0.0187          2.3074           2.3074
    2       -807732.5955       11420596.3750          -0.2722          1.9429           1.9429
    3       -945015.4766       15342453.6250          -0.3185          2.2739           2.2739
    4       -387038.0625        6613476.7500          -0.1304          1.4873           1.4873
    5       -218433.1250        3536792.5938          -0.0736          1.0896           1.0896
    6       -488488.8750        4973936.0625          -0.1646          1.2842           1.2842
    7           466.5536       16937065.0000           0.0002          2.3892           2.3892
    8       -303885.1875        4625921.9375          -0.1024          1.2444           1.2444
    9        -95524.1182        3002935.5939          -0.0322          1.0055           1.0055
   10        -32101.4514        2920973.5625          -0.0108          0.9921           0.9921
   11       -102250.8711        3211297.8125          -0.0345          1.0398           1.0398
   12       -475839.6836        5078455.1250          -0.1604          1.2984           1.2984
   13       -500198.5703        5449631.2500          -0.1686          1.3447           1.3447
   14       -216012.2266        3778544.8750          -0.0728          1.1261           1.1261
   15       -157215.3018        3105308.7188          -0.0530          1.0217           1.0217
   16       -486995.4805        3810245.6250          -0.1641          1.1213           1.1213
   17       -412649.7188        4249022.7500          -0.1391          1.1886           1.1886
   18      -1750694.5000        9248892.3750          -0.5900          1.6640           1.6640
   19       -173864.8066        3541722.8125          -0.0586          1.0910           1.0910
   20       -364774.9688        4305944.3125          -0.1229          1.1984           1.1984
   21       -497929.5703        7000763.3125          -0.1678          1.5269           1.5269
   22       -143275.7207        3312106.0313          -0.0483          1.0564           1.0564
   23       -681343.5641        4519292.7813          -0.2296          1.1410           1.1410
   24       -926204.9609        4503118.9375          -0.3122          1.1917           1.1917
   25        -50925.3693        2748975.9375          -0.0172          0.9624           0.9624
   26       -132976.0410        2606635.3449          -0.0448          0.9362           0.9362
```

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EDUCATIONAL MODELS PROJECT
   THIRD GRADE

CORRELATION MATRIX       TOTAL SAMPLE

                 1           2                        4           5           6           7

  1          1.000000    0.270294    0.144688    0.299959    0.167806    0.104011    0.489724
  2          0.270294    1.000000    0.251393    0.281663    0.191797    0.190351    0.282797
  3          0.144688    0.251393    1.000000    0.224738    0.239674    0.190398    0.168668
  4          0.299959    0.281663    0.224738    1.000000    0.202447    0.179569    0.335433
  5          0.167806    0.191797    0.239674    0.202447    1.000000    0.206986    0.234861
  6          0.104011    0.190351    0.190398    0.179569    0.206986    1.000000    0.134262
  7          0.489724    0.282797    0.158668    0.335433    0.234861    0.134262    1.000000
  8          0.040049    0.175336    0.114696    0.160143    0.112254    0.116544    0.086258
  9          0.257495    0.183067    0.091782    0.152514    0.123896    0.079518    0.233812
 10          0.404642    0.276085    0.101800    0.212603    0.119259    0.076809    0.413335
 11          0.333212    0.172315    0.105157    0.184872    0.114950    0.088804    0.273038
 12          0.144994    0.219915    0.122793    0.171235    0.101877    0.125475    0.146672
 13          0.150014    0.233940    0.145425    0.173361    0.106709    0.140205    0.135688
 14          0.133575    0.215692    0.165372    0.191609    0.137967    0.191967    0.181194
 15          0.298339    0.233891    0.126975    0.198253    0.108964    0.077135    0.311447
 16          0.344415    0.261152    0.148583    0.248612    0.139739    0.112669    0.375436
 17          0.202675    0.142034    0.143347    0.193581    0.097945    0.090204    0.194552
 18          0.078411    0.106817    0.156481    0.096363    0.066299    0.086215    0.080756
 19          0.191413    0.230258    0.182346    0.217117    0.147457    0.140483    0.238800
 20          0.172203    0.176571    0.181658    0.194296    0.140627    0.136188    0.168262
 21          0.135220    0.232744    0.231632    0.215152    0.159349    0.174303    0.170684
 22          0.347894    0.247528    0.097191    0.194198    0.101451    0.066085    0.355964
 23          0.342628    0.258712    0.111089    0.204941    0.123389    0.085708    0.377829
 24          0.336899    0.251915    0.114346    0.208863    0.130670    0.089950    0.383623
 25          0.139139    0.054641    0.040687    0.056227    0.026244    0.015509    0.121980
 26          0.090118    0.061876    0.020765    0.043152    0.024205    0.014584    0.087199
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EDUCATIONAL MODELS PROJECT
   THIRD GRADE

CORRELATION MATRIX       TOTAL SAMPLE

                       8            9           10           11           12           13           14

        1          0.040049     0.257495     0.404640     0.333212     0.144994     0.130314     0.133575
        2          0.175356     0.188067     0.276085     0.172315     0.219915     0.233943     0.215692
        3          0.114696     0.091782     0.101800     0.105157     0.122793     0.145425     0.165372
        4          0.160143     0.152514     0.212603     0.184872     0.171235     0.173361     0.191609
        5          0.112254     0.123896     0.119259     0.114950     0.101877     0.106709     0.137967
        6          0.116544     0.079518     0.076809     0.088804     0.125475     0.140205     0.191967
        7          0.086258     0.233812     0.413335     0.273038     0.146672     0.135688     0.181194
        8          1.000000     0.147226     0.043339     0.069362     0.113253     0.129564     0.136061
        9          0.147226     1.000000     0.186352     0.183960     0.104206     0.110276     0.102257
       10          0.043339     0.186352     1.000000     0.289511     0.157251     0.154544     0.144917
       11          0.069362     0.183960     0.289511     1.000000     0.121193     0.108451     0.113729
       12          0.113253     0.104206     0.157251     0.121193     1.000000     0.390715     0.140497
       13          0.129564     0.110276     0.154544     0.108451     0.390715     1.000000     0.152850
       14          0.136061     0.102257     0.144917     0.113729     0.140497     0.152850     1.000000
       15          0.062385     0.145681     0.561537     0.220399     0.077159     0.093178     0.150955
       16          0.066071     0.160691     0.581663     0.242238     0.114574     0.116181     0.164530
       17          0.073333     0.122642     0.107919     0.127411     0.051484     0.072795     0.106252
       18          0.073784     0.054949     0.052308     0.046998     0.055818     0.070071     0.059071
       19          0.116529     0.226032     0.193611     0.134261     0.137713     0.156027     0.176871
       20          0.080675     0.098412     0.113796     0.125455     0.103563     0.114355     0.142437
       21          0.132112     0.093131     0.131819     0.106873     0.146528     0.166640     0.182404
       22          0.034792     0.151598     0.634454     0.240445     0.085646     0.083358     0.135114
       23          0.046640     0.150635     0.589668     0.236004     0.105778     0.108903     0.142124
       24          0.054508     0.154857     0.566648     0.229728     0.103767     0.103517     0.141965
       25         -0.002305     0.048537     0.158524     0.071330     0.053263     0.057253     0.022867
       26          0.004120     0.048130     0.148141     0.060660     0.010186     0.010325     0.039095
```

EDUCATIONAL MODELS PROJECT
THIRD GRADE

CORRELATION MATRIX TOTAL SAMPLE

	15	16	17	18	19	20	21
1	0.298509	0.344416	0.242676	0.078811	0.191413	0.172203	0.135220
2	0.252691	0.251158	0.142034	0.105817	0.233258	0.176571	0.232744
3	0.126976	0.149583	0.143347	0.156481	0.182346	0.181658	0.231632
4	0.198258	0.248812	0.193581	0.096363	0.217117	0.194296	0.215152
5	0.108964	0.109749	0.097945	0.066299	0.147457	0.140627	0.159349
6	0.077135	0.112669	0.090204	0.086215	0.140483	0.136188	0.174303
7	0.311447	0.375436	0.194552	0.080756	0.238800	0.168262	0.170684
8	0.062085	0.066071	0.073533	0.073784	0.116529	0.080675	0.132112
9	0.145681	0.160691	0.122642	0.054949	0.228032	0.098412	0.093131
10	0.561537	0.581560	0.107919	0.052308	0.193611	0.113796	0.131819
11	0.220099	0.242238	0.127411	0.046998	0.134261	0.125455	0.106873
12	0.077159	0.114574	0.051484	0.055618	0.137713	0.103563	0.146528
13	0.093178	0.116131	0.072795	0.070071	0.156027	0.114355	0.166640
14	0.150955	0.164531	0.106252	0.059071	0.176871	0.142437	0.182494
15	1.000000	0.508410	0.153799	0.073887	0.186820	0.126781	0.146717
16	0.508410	1.000000	0.131212	0.080535	0.201653	0.133169	0.155198
17	0.153799	0.131212	1.000000	0.103707	0.145103	0.191594	0.144089
18	0.073887	0.080535	0.103707	1.000000	0.088925	0.097114	0.108850
19	0.186820	0.201653	0.145103	0.088925	1.000000	0.173731	0.236306
20	0.126781	0.133169	0.191594	0.097114	0.173731	1.000000	0.238420
21	0.146717	0.155198	0.144089	0.108850	0.236306	0.238420	1.000000
22	0.512968	0.563815	0.116231	0.045135	0.161634	0.102029	0.118734
23	0.525123	0.522981	0.112298	0.051586	0.174858	0.109675	0.134396
24	0.436211	0.515008	0.118408	0.053184	0.178653	0.116116	0.136849
25	0.105561	0.102415	0.028164	0.015371	0.049756	0.025681	0.037092
26	0.130064	0.124964	0.059340	0.012649	0.045229	0.079116	0.036327

```
EDUCATIONAL MODELS PROJECT
   THIRD GRADE

CORRELATION MATRIX       TOTAL SAMPLE

                     22           23           24           25           26

   1           0.347894     0.342826     0.336899     0.159139     0.090118
   2           0.247528     0.258712     0.251915     0.034641     0.061878
   3           0.097191     0.111089     0.114346     0.040687     0.020766
   4           0.194198     0.204941     0.208865     0.056227     0.043152
   5           0.101451     0.123389     0.130670     0.026244     0.024205
   6           0.086085     0.085738     0.089950     0.015509     0.014584
   7           0.355964     0.377629     0.383623     0.121980     0.087199
   8           0.034792     0.046640     0.054503    -0.002305     0.004120
   9           0.151398     0.150635     0.154857     0.048537     0.048130
  10           0.634454     0.589668     0.566648     0.158524     0.148141
  11           0.240445     0.236004     0.229728     0.071330     0.060660
  12           0.085646     0.105778     0.103767     0.053263     0.010186
  13           0.083358     0.108903     0.103517     0.057253     0.010325
  14           0.135114     0.142124     0.141965     0.022867     0.039095
  15           0.562968     0.525023     0.486211     0.106661     0.153064
  16           0.563315     0.522981     0.515008     0.102415     0.124964
  17           0.118231     0.112298     0.118408     0.028164     0.059340
  18           0.045135     0.051586     0.053184     0.015571     0.012849
  19           0.161534     0.174858     0.178653     0.049756     0.045229
  20           0.102029     0.109675     0.116116     0.025681     0.079116
  21           0.118734     0.134396     0.136849     0.037092     0.036327
  22           1.000000     0.747481     0.692736     0.113541     0.142015
  23           0.747481     1.000000     0.709368     0.108749     0.138720
  24           0.692736     0.709368     1.000000     0.102226     0.134501
  25           0.113541     0.108749     0.102226     1.000000     0.035537
  26           0.142015     0.138720     0.134501     0.035537     1.000000
```

FIRST GRADE

Due to a programming error the inflated value for the first grade is one-half what it should be viz. it should be 3,413,024 rather than 1,706,512.

1*	II	Socio-Economic Status
2	V	Family Structure and Stability
3	--	Classroom Behavior
4	VIII	Achievement Composite
5	1**	Sex
6	2	Age
7	3	Place of Birth
8	4	Racial-Ethnic Differences
9	5	Number of Persons Living in Home
10	11	Mother's Birth Place
11	14	Parents Speak a Foreign Language at Home
12	15	Student Speaks a Foreign Language Outside of School
13	18	Kindergarten Attendance
14	19	Nursery School
15	20	Attendance at Project Headstart
16	21	Repeat First Grade
17	22	Closer Public School

*These numbers represent the order of the variables for first grade students as they appear on the following sheets.

**These numbers indicate the numbers as they appear in the list of variables for the first grade in Appendix IV.

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EDUCATIONAL MODELS PROJECT
   FIRST GRADE

TOTAL SAMPLE

THE NUMBER OF OBSERVATIONS IS    1706512.

VARIABLE        SUMS          SUMS OF SQUARES          MEAN              SIGMA(N)          SIGMA(N-1)
    1       106050.0630        7121947.8125           0.0621              2.0419             2.0419
    2      -130214.5498        3643330.9375          -0.0763              1.4592             1.4592
    3       -41489.4067       23204053.0000          -0.0243              3.6874             3.6874
    4       -90885.5698        5997947.4375          -0.0533              1.8740             1.8740
    5        56477.9937        1517537.4688           0.0331              0.9424             0.9424
    6        50682.3154        1646470.5625           0.0297              0.9818             0.9818
    7        25756.8701        1459515.9375           0.0151              0.9247             0.9247
    8        25192.0127        1627422.9375           0.0148              0.9764             0.9764
    9       -98391.3174        1686927.7344          -0.0577              0.9926             0.9926
   10       -10019.5846        1492837.5469          -0.0059              0.9353             0.9353
   11       -27101.5900        1443380.5938          -0.0159              0.9195             0.9195
   12       -39407.5234        1583013.3906          -0.0231              0.9629             0.9629
   13       -58461.9774        1590431.5625          -0.0343              0.9648             0.9648
   14       -79579.2031        1692983.3594          -0.0466              0.9949             0.9949
   15        -4759.5355        1581940.1406          -0.0028              0.9628             0.9628
   16        18072.3071          41839.5508           0.0106              0.1562             0.1562
   17      -127413.9014        1651325.7500          -0.0747              0.9809             0.9809
```

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EDUCATIONAL MODELS PROJECT
   FIRST GRADE

CORRELATION MATRIX      TOTAL SAMPLE

                   1           2           3           4           5           6           7

   1        1.000000    0.186753    0.217880    0.382138   -0.004283    0.028099    0.135847
   2        0.186753    1.000000    0.105996    0.134162   -0.026452   -0.010470    0.023017
   3        0.217880    0.105996    1.000000    0.370537    0.125230    0.068389    0.022830
   4        0.382138    0.134162    0.370537    1.000000    0.050623    0.073985    0.104978
   5       -0.004283   -0.026452    0.125230    0.050623    1.000000    0.033151    0.003912
   6        0.028099   -0.010470    0.068389    0.073985    0.033151    1.000000    0.022850
   7        0.135847    0.023017    0.022830    0.104978    0.003912    0.022850    1.000000
   8        0.397949    0.246898    0.150029    0.400302    0.010068    0.021371    0.187652
   9        0.451766    0.074775    0.113946    0.212134   -0.022639    0.017388    0.070999
  10        0.093328    0.018412    0.025893    0.057920    0.005936    0.005432    0.143744
  11        0.113462    0.015265    0.029711    0.069533   -0.010491    0.007006    0.076792
  12        0.118188    0.009181    0.025661    0.067254   -0.016358    0.009818    0.084091
  13        0.248768    0.077024    0.089952    0.224870   -0.002286    0.002977    0.019338
  14        0.188287    0.030858    0.040045    0.089577   -0.020044   -0.024171    0.044820
  15        0.160516    0.098132    0.029511    0.163017   -0.006241   -0.012356    0.071051
  16        0.146251    0.004679    0.096881   -0.010930    0.092025    0.148643    0.022736
  17        0.092424    0.091717    0.002714    0.059063   -0.041156   -0.015614    0.018000


                   8           9          10          11          12          13          14

   1        0.397949    0.451766    0.093328    0.113462    0.118188    0.248768    0.188287
   2        0.246898    0.074775    0.018412    0.015265    0.009181    0.077024    0.030858
   3        0.150029    0.113946    0.025893    0.029711    0.025661    0.089952    0.040045
   4        0.400302    0.212134    0.057920    0.069533    0.067254    0.224870    0.089577
   5        0.010068   -0.022639    0.005936   -0.010491   -0.016358   -0.002286   -0.020044
   6        0.021371    0.017388    0.005432    0.007006    0.009818    0.002977   -0.024171
   7        0.187652    0.070999    0.143744    0.076792    0.084091    0.019338    0.044820
   8        1.000000    0.289266    0.077337    0.098515    0.105195    0.096253    0.034505
   9        0.289266    1.000000    0.037210    0.086954    0.079273    0.132488    0.115715
  10        0.077337    0.037210    1.000000    0.192893    0.223741    0.003485    0.023548
  11        0.098515    0.086954    0.192893    1.000000    0.659025    0.011089    0.016137
  12        0.105195    0.079273    0.223741    0.659025    1.000000    0.025307    0.017879
  13        0.096253    0.132488    0.003485    0.011089    0.025307    1.000000    0.191726
  14        0.034505    0.115715    0.023548    0.016137    0.017879    0.191726    1.000000
  15        0.244282    0.119782    0.003550    0.040635    0.044355    0.196894    0.025170
  16        0.089745    0.078316    0.014068    0.025849    0.020759    0.073140   -0.005952
  17        0.143563    0.092034    0.007010    0.029017    0.028443    0.070695    0.034235
```

```
EDUCATIONAL MODELS PROJECT
   FIRST GRADE

CORRELATION MATRIX       TOTAL SAMPLE

                      15              16              17

      1            0.100316        0.146251        0.092424
      2            0.098132        0.004679        0.091717
      3            0.029511        0.096881        0.002714
      4            0.163017       -0.010930        0.059063
      5           -0.016241        0.092025       -0.041156
      6           -0.012056        0.148643       -0.015614
      7            0.071051        0.022736        0.018060
      8            0.244282        0.089743        0.143563
      9            0.119782        0.078316        0.092034
     10            0.073350        0.014068        0.007010
     11            0.040635        0.025849        0.029017
     12            0.044355        0.020759        0.028443
     13            0.196694        0.073140        0.070695
     14            0.025170       -0.005952        0.034235
     15            1.000000       -0.012705        0.100615
     16           -0.012705        1.000000        0.021685
     17            0.100615        0.021686        1.000000
```

NINTH GRADE

1*	I	Expectations
2	II	Socio-Economic Status
3	III	Social Confidence
4	IV	Attitude Toward Life
5	V	Family Structure and Stability
6	VI	Educational Desires and Plans
7	VII	Study Habits
8	VIII	Achievement Composite
9	1**	Sex
10	2	Age
11	5	Racial-Ethnic Differences
12	6	Number of Persons in the Home
13	8	Number of Older Siblings
14	9	Number of Siblings Dropped Out High School
15	10	Foreign Language Spoken by Parents
16	11	Foreign Language Spoken by Student
17	25	PTA Attendance
18	29	Attended Kindergarten
19	30	Infrequent Change in Schools
20	39	Few Voluntary Absences

*These numbers represent the order of the variables for the ninth grade students as they appear on the following sheets.

**These numbers indicate the variables as they appear in the list of variables for the ninth and twelfth grades in Appendix IV.

```
EDUCATIONAL MODELS PROJECT
 NINTH GRADE

TOTAL SAMPLE


THE NUMBER OF OBSERVATIONS IS    3021476.

VARIABLE        SUMS          SUMS OF SQUARES            MEAN           SIGMA(N)        SIGMA(N-1)
    1     -1098200.4219      19530123.0000            -0.3635          2.5163          2.5163
    2      -612357.2656      17344318.2500            -0.2027          2.3873          2.3873
    3     -4996263.4375     0.10670964E 09            -1.6536          5.7081          5.7081
    4     -3453698.0000      67236916.0000            -1.1430          4.5767          4.5767
    5      -988838.3047      17036756.2500            -0.3273          2.3519          2.3519
    6     -1271723.4531      34711367.5000            -0.4209          3.3632          3.3632
    7     -1469024.0000      25808057.5000            -0.4862          2.8819          2.8819
    8       -27215.1528      41683038.0000            -0.0090          3.7142          3.7142
    9      -825383.9297      21335277.2500            -0.2732          2.6432          2.6432
   10      -140477.4492       3368148.5938            -0.0465          1.0548          1.0548
   11       -98195.3350       3175410.6250            -0.0325          1.0246          1.0246
   12      -173194.8867       3693248.3750            -0.0573          1.1041          1.1041
   13      -211337.9297       3779515.3125            -0.0699          1.1162          1.1162
   14      -207407.2363       3484435.1250            -0.0686          1.0717          1.0717
   15      -376599.3438       5854725.3750            -0.1246          1.3864          1.3864
   16      -359964.4648       5598939.8125            -0.1191          1.3560          1.3560
   17      -379626.4180       5349355.5000            -0.1256          1.3246          1.3246
   18      -324000.9844       5287538.9375            -0.1072          1.3185          1.3185
   19      -767607.9688      13202277.3750            -0.2541          2.0748          2.0748
   20        -6661.5999       2968050.5000            -0.0022          0.9911          0.9911
```

```
EDUCATIONAL MODELS PROJECT
 NINTH GRADE
CORRELATION MATRIX      TOTAL SAMPLE

                 1            2            3            4            5            6            7

  1         1.000000     0.396472     0.454539     0.473846     0.366065     0.545080     0.536663
  2         0.396472     1.000000     0.311208     0.383877     0.467701     0.534729     0.449631
  3         0.454539     0.311208     1.000000     0.846105     0.333803     0.364499     0.518119
  4         0.473846     0.383877     0.846105     1.000000     0.333425     0.452748     0.500150
  5         0.366065     0.467701     0.333803     0.333425     1.000000     0.327267     0.483460
  6         0.545080     0.534729     0.364499     0.452748     0.327267     1.000000     0.502798
  7         0.536663     0.449631     0.518119     0.500150     0.483460     0.502798     1.000000
  8         0.391799     0.537212     0.302432     0.470831     0.329621     0.510009     0.356106
  9         0.204091     0.256103     0.240546     0.214585     0.345452     0.156247     0.356952
 10         0.276107     0.336782     0.208920     0.261306     0.285248     0.332536     0.292824
 11         0.171730     0.412216     0.246651     0.302581     0.350560     0.164332     0.241682
 12         0.209035     0.419341     0.180292     0.214005     0.244387     0.245336     0.259909
 13         0.230700     0.462922     0.181866     0.213083     0.311628     0.270954     0.280591
 14         0.247148     0.442827     0.167223     0.212553     0.287844     0.319665     0.271113
 15         0.223058     0.261281     0.202516     0.204405     0.331948     0.169888     0.311819
 16         0.223935     0.289997     0.213170     0.206295     0.313278     0.210522     0.321889
 17         0.308343     0.332037     0.273418     0.260226     0.343968     0.307032     0.436969
 18         0.250822     0.400965     0.276731     0.259915     0.326170     0.301939     0.413802
 19         0.321348     0.290235     0.373976     0.323364     0.447229     0.273307     0.533266
 20         0.162901     0.146629     0.135047     0.119998     0.048586     0.210555     0.162261


                 8            9           10           11           12           13           14

  1         0.391799     0.204091     0.276107     0.171730     0.209035     0.230700     0.247148
  2         0.537212     0.256103     0.336782     0.412216     0.419341     0.462922     0.442827
  3         0.302432     0.240546     0.208920     0.246651     0.180292     0.181866     0.167223
  4         0.470831     0.214585     0.261306     0.302581     0.214005     0.213083     0.212553
  5         0.329621     0.345452     0.285248     0.350560     0.244387     0.311628     0.287844
  6         0.510009     0.156247     0.332536     0.164332     0.245336     0.270954     0.319665
  7         0.356106     0.356952     0.292824     0.241682     0.259909     0.280591     0.271113
  8         1.000000     0.129762     0.371194     0.470359     0.280579     0.281055     0.319090
  9         0.129762     1.000000     0.232447     0.147480     0.222723     0.230025     0.171673
 10         0.371194     0.232447     1.000000     0.202034     0.201703     0.206001     0.258479
 11         0.470359     0.147480     0.202034     1.000000     0.309264     0.249138     0.215403
 12         0.280579     0.222723     0.201703     0.309264     1.000000     0.336400     0.250105
 13         0.281055     0.230025     0.206001     0.249138     0.336400     1.000000     0.632734
 14         0.319090     0.171673     0.258479     0.215403     0.250105     0.632734     1.000000
 15         0.183694     0.346258     0.186965     0.193763     0.205433     0.220097     0.187062
 16         0.183254     0.328684     0.188259     0.169138     0.202045     0.212903     0.182803
 17         0.181916     0.232326     0.173658     0.101578     0.141369     0.188210     0.185681
 18         0.236009     0.280338     0.207373     0.160953     0.202161     0.241242     0.229143
 19         0.183430     0.351510     0.216226     0.168664     0.203683     0.197215     0.177024
 20         0.017235     0.021999     0.036181    -0.043675     0.020847     0.023144     0.046870
```

EDUCATIONAL MODELS PROJECT
NINTH GRADE
CORRELATION MATRIX TOTAL SAMPLE

	15	16	17	18	19	20
1	0.223058	0.223935	0.308343	0.250822	0.321348	0.162901
2	0.261281	0.289997	0.332037	0.400965	0.290235	0.146629
3	0.202516	0.213170	0.273418	0.276731	0.373976	0.135047
4	0.204405	0.206295	0.260226	0.259915	0.323364	0.119998
5	0.331948	0.313278	0.343968	0.328170	0.447229	0.048586
6	0.169888	0.210522	0.307032	0.301939	0.273307	0.210555
7	0.311819	0.321889	0.[illegible]6969	0.413802	0.533266	0.162261
8	0.183694	0.183254	0.181916	0.236009	0.183430	0.017235
9	0.346258	0.328684	0.232326	0.280338	0.351510	0.021999
10	0.186965	0.188259	0.173658	0.207373	0.216226	0.036181
11	0.193763	0.169138	0.101578	0.160953	0.168664	-0.043675
12	0.205433	0.202045	0.141369	0.202161	0.203683	0.020847
13	0.220097	0.212903	0.188210	0.241242	0.197215	0.023144
14	0.187062	0.182803	0.185681	0.229143	0.177024	0.046870
15	1.000000	0.347816	0.210916	0.197181	0.301046	0.000226
16	0.347816	1.000000	0.215666	0.260833	0.297326	0.068943
17	0.210916	0.215666	1.000000	0.272451	0.346797	0.141033
18	0.197181	0.260833	0.272451	1.000000	0.420111	0.109814
19	0.301046	0.297326	0.346797	0.420111	1.000000	0.079923
20	0.000226	0.068943	0.141033	0.109814	0.079923	1.000000

SIXTH GRADE

1*	II	Socio-Economic Status
2	V	Family Structure and Stability
3	I	Expectations for Excellence
4	VI	Educational Plans and Desires
5	VII	Study Habits
6	IV	Attitude Toward Life
7	VIII	Achievement Composite
8	1**	Sex
9	2	Age
10	3	Place of Birth
11	4	Racial-Ethnic Differences
12	5	Number of Persons Linving in the Home
13	11	Mother's Place of Birth
14	14	Parents Speak a Foreign Language in the Home
15	15	Student Speaks a Foreign Language Outside of School
16	22	Number White Students in Class
17	26	Go to Other School
18	34	Non-White Teacher Last Year
19	35	Number White Friends
20	36	Kindergarten Attendance
21	37	Nursery School Attendance
22	38	Grade Last Year

*These variables represent the order of the variables for the sixth grade students as they appear on the following sheets.

**These numbers indicate the variables as they appear in the list of variables for the sixth grade in Appendix IV.

23	39	Time to Get to School
24	40	Mode of Travel to School
25	41	Closer Public School
26	43	Number White Classmates Preferred

```
EDUCATIONAL MODELS PROJECT
   SIXTH GRADE

TOTAL SAMPLE


THE NUMBER OF OBSERVATIONS IS     2803766.

VARIABLE        SUMS          SUMS OF SQUARES            MEAN            SIGMA(N)         SIGMA(N-1)
     1     -347895.6523     11851172.7500            -0.1241             2.0522             2.0522
     2     -801827.1875     12180350.7500            -0.2860             2.0646             2.0646
     3    -1001458.1328     16948254.0000            -0.3572             2.4325             2.4325
     4     -784923.2969      7883428.1875            -0.2800             1.6533             1.6533
     5    -1489975.8906     20439622.5000            -0.5314             2.6472             2.6472
     6    -1193908.9063     20202489.7500            -0.4258             2.6503             2.6503
     7       93485.4385     25950669.0000             0.0333             3.0421             3.0421
     8     -218605.3711      4511507.6875            -0.0780             1.2661             1.2661
     9      -68380.3174      2887105.9375            -0.0244             1.0145             1.0145
    10     -156982.7090      3241269.1250            -0.0560             1.0737             1.0737
    11     -100826.5205      2898458.3750            -0.0360             1.0161             1.0161
    12      -98666.9824      2971238.9688            -0.0352             1.0288             1.0288
    13     -187015.8730      3393841.1563            -0.0667             1.0982             1.0982
    14     -549856.6016      6916530.8750            -0.1961             1.5583             1.5583
    15     -383353.0195      3978917.2813            -0.1367             1.1834             1.1834
    16     -179287.9258      3162095.3750            -0.0639             1.0601             1.0601
    17     -467172.9688      5898946.6875            -0.1666             1.4409             1.4409
    18     -513926.6445      4969115.3750            -0.1833             1.3186             1.3186
    19     -271664.4844      3443616.4375            -0.0969             1.1040             1.1040
    20     -618405.2656      7102025.2500            -0.2206             1.5762             1.5762
    21     -750419.4297      9037647.5000            -0.2676             1.7753             1.7753
    22     -478385.4414      5352441.1875            -0.1706             1.3711             1.3711
    23     -519598.9531      5515110.3750            -0.1853             1.3902             1.3902
    24     -543889.9141      6506175.1875            -0.1940             1.5109             1.5109
    25     -551109.0391      5713378.8750            -0.1966             1.4139             1.4139
    26     -364018.3164      3654149.4063            -0.1298             1.1342             1.1342
```

ICATIONAL MODELS PROJECT
SIXTH GRADE

RRELATION MATRIX TOTAL SAMPLE

	1	2	3	4	5	6	7
1	1.000000	0.356740	0.278674	0.395756	0.396645	0.373535	0.497321
2	0.356740	1.000000	0.372513	0.348727	0.472281	0.470688	0.325934
3	0.278674	0.372513	1.000000	0.444018	0.489282	0.517132	0.255278
4	0.395756	0.348727	0.444018	1.000000	0.524027	0.523578	0.482723
5	0.396645	0.472281	0.489282	0.524027	1.000000	0.662305	0.367373
6	0.373535	0.470688	0.517132	0.523578	0.662305	1.000000	0.382019
7	0.497321	0.325934	0.255278	0.482723	0.367373	0.382019	1.000000
8	0.095142	0.199600	0.091649	0.147599	0.248169	0.159174	0.090469
9	0.299300	0.239557	0.164317	0.283647	0.226919	0.209334	0.378302
10	0.235008	0.188561	0.146754	0.202870	0.194452	0.187587	0.258427
11	0.371557	0.299925	0.168372	0.222425	0.221866	0.225234	0.490821
12	0.378996	0.182659	0.124686	0.202142	0.195902	0.189581	0.299314
13	0.316926	0.256803	0.193863	0.244763	0.270806	0.250106	0.282274
14	0.227517	0.341053	0.245994	0.227088	0.344183	0.336964	0.206123
15	0.174024	0.252530	0.178199	0.172483	0.240714	0.238284	0.182473
16	0.348284	0.325252	0.210588	0.220755	0.288492	0.290834	0.438512
17	0.249377	0.378394	0.367636	0.333465	0.510053	0.556387	0.242450
18	0.287874	0.340696	0.357958	0.319623	0.398348	0.418909	0.341941
19	0.356804	0.331841	0.275280	0.277402	0.338212	0.349158	0.436179
20	0.313445	0.332355	0.394560	0.387082	0.485728	0.474746	0.259231
21	0.260251	0.380981	0.440490	0.401436	0.507680	0.519656	0.247522
22	0.256031	0.372464	0.394744	0.430216	0.468215	0.457966	0.313668
23	0.292941	0.319236	0.378015	0.407793	0.457737	0.436715	0.287648
24	0.249134	0.367460	0.423635	0.432135	0.499637	0.481256	0.268646
25	0.281857	0.350750	0.396448	0.430055	0.472679	0.466612	0.314560
26	0.283399	0.270963	0.246414	0.310814	0.336268	0.313311	0.367449

EDUCATIONAL MODELS PROJECT
SIXTH GRADE

CORRELATION MATRIX TOTAL SAMPLE

	8	9	10	11	12	13	14
1	0.095142	0.299300	0.235008	0.371557	0.378996	0.316926	0.227517
2	0.199600	0.239557	0.188561	0.299925	0.182659	0.256803	0.341053
3	0.091649	0.164317	0.146754	0.168372	0.124686	0.193863	0.245994
4	0.147599	0.283647	0.202870	0.222425	0.202142	0.244763	0.227088
5	0.248169	0.226919	0.194452	0.221866	0.195902	0.270806	0.344183
6	0.159174	0.209334	0.187587	0.225234	0.189581	0.250106	0.336964
7	0.090469	0.378302	0.258427	0.490821	0.299314	0.282274	0.206123
8	1.000000	0.148523	0.096178	0.065647	0.089164	0.091067	0.153791
9	0.148523	1.000000	0.150272	0.238431	0.189139	0.153246	0.127853
10	0.096178	0.150272	1.000000	0.205048	0.139743	0.294868	0.163736
11	0.065647	0.238431	0.205048	1.000000	0.274660	0.219957	0.194180
12	0.089164	0.189139	0.139743	0.274660	1.000000	0.166724	0.138905
13	0.091067	0.153246	0.294868	0.219957	0.166724	1.000000	0.238980
14	0.153791	0.127853	0.163736	0.194180	0.138905	0.238980	1.000000
15	0.090311	0.137796	0.137536	0.205903	0.109302	0.184910	0.399588
16	0.065264	0.191688	0.165288	0.631921	0.244703	0.176818	0.183757
17	0.142850	0.157348	0.127078	0.213973	0.143474	0.172964	0.269328
18	0.105369	0.173844	0.158876	0.369601	0.169776	0.187688	0.236494
19	0.075487	0.194980	0.162740	0.618452	0.242768	0.186625	0.196981
20	0.132890	0.173311	0.129658	0.167232	0.146317	0.172340	0.203474
21	0.130608	0.149131	0.142137	0.194884	0.126741	0.196937	0.262277
22	0.153325	0.243260	0.155736	0.225255	0.140271	0.178777	0.251359
23	0.111568	0.177811	0.146733	0.193037	0.156306	0.177839	0.206348
24	0.139827	0.156988	0.147325	0.198830	0.129753	0.186022	0.252683
25	0.110653	0.174231	0.156996	0.234976	0.147749	0.199192	0.248041
26	0.093344	0.164888	0.134423	0.428467	0.181033	0.162330	0.164707

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EDUCATIONAL MODELS PROJECT
   SIXTH GRADE

CORRELATION MATRIX      TOTAL SAMPLE

                     15          16          17          18          19          20          21

        1        0.174024    0.348284    0.249377    0.287874    0.356804    0.313445    0.260251
        2        0.252530    0.325252    0.378394    0.340696    0.331841    0.332355    0.380981
        3        0.178199    0.210588    0.367636    0.357958    0.275280    0.394560    0.440490
        4        0.172483    0.220755    0.333465    0.319623    0.277402    0.387082    0.401436
        5        0.240714    0.288492    0.510053    0.398348    0.338212    0.485728    0.507680
        6        0.238284    0.290834    0.556387    0.418909    0.349158    0.474746    0.519656
        7        0.182473    0.438512    0.242450    0.341941    0.436179    0.259231    0.247522
        8        0.090311    0.065264    0.142850    0.105369    0.075487    0.132890    0.130608
        9        0.137796    0.191688    0.157348    0.173844    0.194980    0.173311    0.149131
       10        0.137536    0.165288    0.127078    0.158876    0.162740    0.129658    0.142137
       11        0.205903    0.631921    0.213973    0.369601    0.618452    0.167232    0.194884
       12        0.109302    0.244703    0.143474    0.169776    0.242768    0.146317    0.126741
       13        0.184910    0.176818    0.172964    0.187688    0.186625    0.172340    0.196937
       14        0.399588    0.183757    0.269328    0.236494    0.196981    0.203474    0.262277
       15        1.000000    0.160617    0.207553    0.187628    0.175548    0.134450    0.185280
       16        0.160617    1.000000    0.273232    0.412062    0.669804    0.214266    0.247821
       17        0.207553    0.273232    1.000000    0.338405    0.307660    0.359383    0.399515
       18        0.187628    0.412062    0.338405    1.000000    0.456915    0.343594    0.385258
       19        0.175548    0.669804    0.307660    0.456915    1.000000    0.286567    0.318384
       20        0.134450    0.214266    0.359383    0.343594    0.286567    1.000000    0.527750
       21        0.185280    0.247821    0.399515    0.385258    0.318384    0.527750    1.000000
       22        0.198381    0.252017    0.365283    0.366748    0.312597    0.452462    0.488328
       23        0.151609    0.230469    0.343312    0.331150    0.289703    0.489755    0.471894
       24        0.188368    0.238172    0.380885    0.373580    0.306445    0.489146    0.540136
       25        0.190252    0.266057    0.375127    0.362795    0.324969    0.423807    0.496599
       26        0.141964    0.466415    0.257799    0.340173    0.550746    0.271964    0.300502
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EDUCATIONAL MODELS PROJECT
   SIXTH GRADE

CORRELATION MATRIX      TOTAL SAMPLE

                        22              23              24              25              26

      1            0.256031        0.292941        0.249134        0.281857        0.283399
      2            0.372464        0.319236        0.367460        0.350750        0.270963
      3            0.394744        0.378015        0.423635        0.396448        0.246414
      4            0.430216        0.407793        0.432135        0.430055        0.310814
      5            0.468215        0.457737        0.499637        0.472679        0.336268
      6            0.457966        0.436715        0.481256        0.466612        0.313311
      7            0.313668        0.287648        0.268646        0.314560        0.367449
      8            0.153325        0.111568        0.139827        0.110653        0.093344
      9            0.243260        0.177811        0.156988        0.174231        0.164888
     10            0.155736        0.146733        0.147325        0.156996        0.134423
     11            0.225255        0.193037        0.198830        0.234976        0.428467
     12            0.140271        0.156306        0.129753        0.147749        0.181033
     13            0.178777        0.177839        0.186022        0.199192        0.162330
     14            0.251359        0.206348        0.252683        0.248041        0.164707
     15            0.198381        0.151609        0.188368        0.190252        0.141964
     16            0.252017        0.230469        0.238172        0.266057        0.466415
     17            0.365283        0.343312        0.380885        0.375127        0.257799
     18            0.366748        0.331150        0.373580        0.362795        0.340173
     19            0.312597        0.289703        0.306445        0.324969        0.550746
     20            0.452462        0.489755        0.489146        0.423807        0.271964
     21            0.488328        0.471894        0.540136        0.496599        0.300502
     22            1.000000        0.455752        0.525566        0.455616        0.308914
     23            0.455752        1.000000        0.521381        0.469103        0.284411
     24            0.525566        0.521381        1.000000        0.517374        0.314589
     25            0.455616        0.469103        0.517374        1.000000        0.320392
     26            0.308914        0.284411        0.314589        0.320392        1.000000
```

APPENDIX VI

Teacher Questionnaire Item Codes*

*On the following pages the same code values were used for Elementary (E) and Secondary (S) unless indicated otherwise by separate code values. NR indicates the value given to those teachers who failed to respond to a particular question. Questionnaires are available upon request from the author.

Variable Number	Questionnaire Item No.	Title	Interpretation of Coding
1	1	Sex	One for female, zero for male.
2	2	Age	High value indicates older age.
3	3	Area Spent Most of Life	High value indicates individual spent most of life in another area or State.
4	4	Type/Size of Community Spent Most of Life	High value indicates urban and suburban.
5	5	Racial-Ethnic Differences (on Contextual Vocabulary)	Each person was assigned the mean verbal score of his own race or ethnic group. A high value indicates white while a low score indicates Negro and Puerto Rican.
6	7	Area Graduated from High School	High value indicates graduation from a high school in another area or State.
7	8	Father's Occupational Level	High value indicates professional, managerial and sales occupations. Low value indicates unskilled or farm worker.
8	9	Father's Educational Level	High value indicates much education.
9	10	Mother's Educational Level	High value indicates much education.
10	11	Highest Degree Held	High value indicates higher degree.
11	13	Undergraduate Institution Attended	The item response categories were ranked by the magnitude of the

Variable Number	Questionnaire Item Number	Title	Interpretation of Coding
			teacher's verbal score, assigning a high rank to a high verbal score. Each respondent was assigned the rank for the item response he chose. A high score indicates a high rank.
12	14	Highest Degree Offered by Undergraduate Institution	Same as variable 11.
13	15	Area of Undergraduate Institution	High value indicates institution is located in another area or State.
14	16	Percent of White Students at Undergraduate Institution	High value indicates many white students.
15	23	Ranking of Academic Level of Undergraduate Institution	High value indicates the teacher feels that his undergraduate institution has a high academic standing.
16	24	Credit Beyond Highest Degree	High value indicates many credits beyond highest degree.
17	25	Years of Teaching Experience	High value indicates many years experience.
18	26	Years of Teaching in Present School	High value indicates many years experience in present school.
19	28	Certification	High value indicates permanent or long-term certification.
20	29	Assignment to Present School District	A value of one was assigned if they chose their present school, zero if they were placed in the school.
21	30	Attend Summer Institutes	High value indicates teacher has attended many NSF-NDEA-ESEA sponsored institutes.

Variable Number	Questionnaire Item Number	Title	Interpretation of Coding
22	31	Attend Summer Institutes for teaching culturally disadvantaged	High value indicates teacher has attended 2 or more summer institutes.
23	32	Annual Teaching Salary	High value indicates a high salary.
24	33	Student Effort	High value indicates teacher feels students in present school try hard to achieve.
25	34	Student Ability	High value indicates teacher feels students in present school are of high academic ability.
26	35	Employment Status	High value indicates a tenured appointment.
27	36	Member National Honorary	One for yes, zero for no.
28	37	Re-enter Teaching	High value indicates the teacher would re-enter teaching as a profession.
29	38	Prefer Other School	High value indicates the teacher would prefer to teach in some other school.
30	39	Type High School Preferred	High value indicates the teacher would prefer an academic school with strong emphasis on college preparation. Low value indicates preference for trade or vocational school.
31	40	Socio-Economic Background of Student Preferred	High value indicates a preference for children of professional and white collar workers. Low value indicates preference for children of blue collar and farm workers.

Variable Number	Questionnaire Item Number	Title	Interpretation of Coding
32	43	Preference for Student Ability	High value indicates preference for a high ability group.
33	44	School Reputation	High value indicates that the teacher feels his present school is highly regarded by other teachers not in the school.
34	45	Percent White of Teacher's Students	A high value indicates that the teacher has a high percentage of white students in his classes.
35	47	School Problems: External	A high value indicates many school problems that are external to the school such as: poor home environment of students; students are poorly fed and clothed; parents put too much pressure on the students for grades, etc.
36	47	School Problems: Internal	A high value indicates many school problems that are internal to the school such as: racial tension; excessive emphasis on athletics; excessive competition for grades; excessive student absences, etc.
37	48	Member of Teachers Associations	A high value indicates that the teacher is an officer or an active participant in a teachers association. A low value indicates non-membership.
38	49	Reads Educational Journals	A high value indicates the teacher regularly reads 3 or more journals. A low value indicates the teacher is not a regular journal reader.

Variable Number	Questionnaire Item Number	Title	Interpretation of Coding
39	50	**Teach Until Retirement**	A high value indicates the teacher expects to remain in full-time public education until retirement.
40	51	**Hours a Day Spent in Class Preparation**	A high value indicates that the teacher spends 4 or more hours a day, outside of the regular working day, in preparation for teaching or counseling. A low value indicates no preparation.
41	52	**Hours a Day Spent in Classroom Teaching**	The item response categories were ranked by the magnitude of their verbal score, assigning a high rank to a high verbal score. Each respondent was assigned the rank for the item response he chose. A high score indicates a high rank.
42	53	Average Class Size	Teachers who had an average class size of approximately 12 to 35 students were assigned a one; all larger and smaller class sizes were scored zero (teachers were required to grid their answer to this question and this procedure introduced errors). Teachers who taught less than 3 hours a day were omitted from the analysis of this variable.
43	55	Hours a Day Spent in Counseling	A high value indicates that the teacher spends many hours in addition to his official assignment, in counseling. Teachers who taught less than 3 hours a day were omitted from the analysis of this variable.

Variable Number	Questionnaire Item Number	Title	Interpretation of Coding
44	57	Ability Grouping	A high value indicates that the teacher has all high ability groups. An intermediate value indicates mixed ability groups and a low value, low ability groups.
45	73-102	Contextual Vocabulary Score	A high value indicates many items correct.

Coding of Items From the Teacher Questionnaire for Elementary (K-8) and Secondary (9-12) Teachers

Variable Number	Question Item No.		A	B	C	D	E	F	G	H	I	J	K	NR
1	1	Elem. & Sec.	0	1										Omit
2	2	Elem. & Sec.	22	30	40	50	60	67						Omit
3	3	Elem. & Sec.	1	2	3	0	0	0	0					0
4	4	Elementary	1	2	3	4	2	5	5	6				0
		Secondary	1	2	3	2	4	5	5	6				0
5	5	Elementary	41	52	47	48	42							43
		Secondary	41	51	47	48	43							42
5	6	Elementary	39	44										43
		Secondary	45	44										42
6	7	Elem. & Sec.	1	2	3	0	0							0
7	8	Elementary	8	12	9	6	11	5	1	4	10	7	3	2
		Secondary	8	12	9	5	10	6	2	4	11	7	1	3
8	9	Elem. & Sec.	1	2	3	4	5	6	7	8	1			0
9	10	Elem. & Sec.	1	2	3	4	5	6	7	8	1			0
10	11	Elem. & Sec.	1	2	3	4	5	5						0
11	13	Elementary	2	7	5	4	6	1	3					0
		Secondary	2	6	5	4	7	3	1					0

Continued

Variable Number	Question Item No.		A	B	C	D	E	F	G	H	I	J	K	NR
12	14	Elementary	2	1	3	2	4							1
		Secondary	1	2	3	3	4							1
13	15	Elem. & Sec.	1	2	3	0	0	0	0					0
14	16	Elem. & Sec.	100	95	82	62	37	17	5	0				99
15	23	Elem. & Sec.	95	85	75	65	55	45	35	25	15	5		50
16	24	Elem. & Sec.	0	5	15	25	35							0
17	25	Elem. & Sec.	0.0	1.5	3.5	7.0	12.0	17.0	24.0	35.0				7.0
18	26	Elem. & Sec.	0.0	1.5	3.5	7.0	12.0	17.0	24.0	35.0				3.5
19	28	Elem. & Sec.	0	1	2	3								0
20	29	Elem. & Sec.	1	0										0
21	30	Elem. & Sec.	0.0	1.0	2.5	4.5								0.0
22	31	Elem. & Sec.	0	1	2									0
23	32	Elem. & Sec.	2.8	3.5	4.5	5.5	6.5	7.5	8.5	9.5	10.5			2.8
24	33	Elem. & Sec.	4	3	2	1	0							0
25	34	Elem. & Sec.	4	3	2	1	0							0
26	35	Elem. & Sec.	2	1	0									0
27	36	Elem. & Sec.	1	0										0
28	37	Elem. & Sec.	4	3	2	1	0							2
29	38	Elem. & Sec.	2	1	0									1

Continued

Variable Number	Question Item No.		A	B	C	D	E	F	G	H	I	J	K	NR
30	39	Elem. & Sec.	3	2	Omit	0	1							Omit
31	40	Elem. & Sec.	6	5	4	3	2	1	0					0
32	43	Elem. & Sec.	2	1	0	Omit	1							1
33	44	Elem. & Sec.	4	3	2	1	0	2						2
34	45	Elem. & Sec.	.00	.05	.17	.37	.62	.82	.95	1.00				.90
35	47	Elem. & Sec.	Sum the values for a, b, d, m, g.											
36		Elem. & Sec.	Sum the values for c, e, f, g, h, i, j, k, l, n, o. p, r, s, t, u											
37	48	Elem. & Sec.	0	3	2	1								0
38	49	Elem. & Sec.	0	1	2	3								0
39	50	Elem. & Sec.	4	3	1	0								2
40	51	Elem. & Sec.	0	1	2	3	4.5							0
41	52	Elementary	0	1	1	2	2	3	2					0
		Secondary	1	3	4	6	7	5	2					0
42	53		(15-34)	(12-34)	(0-14)	(0-11)	(35+)							
		Elementary	1	-	0	-	0							0
		Secondary	-	1	-	0	0							0
43	55	Elem. & Sec.	0.0	1.5	4.0	8.0	11.5							Omit
44	57	Elem. & Sec.	2	0	1	1								1

APPENDIX VII

Item Means, Standard Deviations, Intercorrelations and Varimax Factors from the Teacher Questionnaire for Elementary (K-8) and Secondary (9-12) Teachers. The number of teachers in the sample and the inflated values using the sampling weights are: Elementary sample 36,241; Elementary inflated, 830,689; Secondary sample, 24,008; Secondary inflated, 556,678.

The variable numbers, titles and questionnaire numbers (Q#) are as follows:

1. Sex (Q 1)
2. Age (Q 2)
3. Area Spent Most of Life (Q 3)
4. Type/Size of Community Spent Most of Life (Q 4)
5. Racial-Ethnic Difference (Q 5-6)
6. Area Graduated from High School (Q 7)
7. Father's Occupational Level (Q 8)
8. Father's Educational Level (Q 9)
9. Mother's Educational Level (Q 10)
10. Highest Degree Held (Q 11)
11. Undergraduate Institution Attended (Q 13)
12. Highest Degree Offered by Undergraduate Institution (Q 14)
13. Area of Undergraduate Institution (Q 15)
14. Percent of White Students at Undergraduate Institution (Q 16)
15. Ranking of Academic Level of Undergraduate Institution (Q 23)
16. Credit Beyond Highest Degree (Q 24)
17. Years of Teaching Experience (Q 25)
18. Years of Teaching in Present School (Q 26)
19. Certification (Q 28)
20. Assignment to Present School District (Q 29)
21. Attend Summer Institutes (Q 30)
22. Attend Summer Institutes for Culturally Disadvantaged (Q 31)
23. Annual Teaching Salary (Q 32)

24. Student Effort (Q 33)
25. Student Ability (Q 34)
26. Employment Status (Q 35)
27. Member National Honorary (Q 36)
28. Re-enter Teaching (Q 37)
29. Prefer Other School (Q 38)
30. Type High School Preferred (Q 39)
31. Socio-Economic Background of Student Preferred (Q 40)
32. Preference for Student Ability (Q 43)
33. School Reputation (Q 44)
34. Percent White of Teacher's Students (Q 45)
35. School Problems: External (Q 47)
36. School Problems: Internal (Q 47)
37. Member of Teachers Association (Q 48)
38. Reads Educational Journals (Q 49)
39. Teach Until Retirement (Q 50)
40. Hours a Day Spent in Classroom Preparation (Q 51)
41. Hours a Day Spent in Classroom Teaching (Q 52)
42. Average Class Size (Q 53)
43. Hours a Day Spent in Counseling (Q 55)
44. Ability Grouping (Q 57)
45. Contextual Vocabulary Score (-)

Elementary (K-8)

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ALL VARIABLES

THE NUMBER OF OBSERVATIONS IS     830689.

VARIABLE        SUMS           SUMS OF SQUARES            MEAN              SIGMA(N)            SIGMA(N-1)
    1         682483.3203        682483.3125             0.8216              0.3829              0.3829
    2       32514020.7500     0.14204736E 10            39.1410             13.3407             13.3407
    3        1496027.3438       3233814.7813             1.8009              0.8059              0.8059
    4        2135627.4375       6976219.3750             2.5709              1.3374              1.3374
    5       41734667.5000     0.21099006E 10            50.2410              3.9723              3.9723
    6        1599224.0000       3604136.8438             1.9252              0.7952              0.7952
    7        5877258.1250      46447427.5000             7.0752              2.4200              2.4200
    8        2869433.0313      13648689.8750             3.4543              2.1210              2.1210
    9        2990925.0313      13812408.7500             3.6005              1.9141              1.9141
   10        2542182.0625       8109695.8125             3.0603              0.6301              0.6301
   11        4700333.3125      27680662.5000             5.6584              1.1426              1.1426
   12        2055565.6719       6312859.2500             2.4745              1.2150              1.2150
   13        1726066.7500       3967522.8750             2.0779              0.6772              0.6772
   14       66675404.5000     0.62431157E 10            80.2652             32.7580             32.7580
   15       58719438.0000     0.45635965E 10            70.6877             22.2936             22.2936
   16        9050485.6250     0.20952486E 09            10.8952             11.5553             11.5553
   17        9991912.6250     0.21640390E 09            12.0285             10.7623             10.7623
   18        5230032.5625      80215730.0000             6.2960              7.5449              7.5449
   19        1984797.5469       5218928.8125             2.3893              0.7574              0.7574
   20         388296.0742        388296.0820             0.4674              0.4989              0.4989
   21          69294.0791        130059.3164             0.0834              0.3868              0.3868
   22         147297.6152        198626.4531             0.1773              0.4557              0.4557
   23        5131582.6250      33821651.5000             6.1775              1.5980              1.5980
   24        1881628.5938       4901759.1875             2.2651              0.8775              0.8775
   25        1864328.0938       4811394.4375             2.2443              0.8690              0.8690
   26        1179347.7500       1904467.8750             1.4197              0.5263              0.5263
   27         126760.3477        126760.3428             0.1526              0.3596              0.3596
   28        2711825.3750       9738320.2500             3.2646              1.0324              1.0324
   29         389235.4336        550443.1328             0.4686              0.6656              0.6656
   30        2035782.2969       5449112.0625             2.4507              0.7441              0.7441
   31        2586600.7500      10932707.1250             3.1138              1.8615              1.8615
   32        1049877.8750       1558721.3281             1.2639              0.5283              0.5283
   33        2276546.4688       6997303.4375             2.7406              0.9554              0.9554
   34         594042.7891        561917.9688             0.7151              0.4063              0.4063
   35        1268527.5156       3321398.0000             1.5271              1.2909              1.2909
   36        2299482.3125      11876999.3750             2.7682              2.5759              2.5759
   37        1092526.0469       1795724.5781             1.3152              0.6572              0.6572
   38        1028933.2500       2019725.7656             1.2387              0.9472              0.9472
   39        2374784.6563       8071517.7500             2.8588              1.2425              1.2425
   40        1896626.5469       5394412.0625             2.2832              1.1318              1.1318
   41        1947192.0781       4775957.9375             2.3441              0.5047              0.5047
   42         546760.0938        546760.1016             0.6582              0.4743              0.4743
   43        1174924.5781       4748269.5625             1.4144              1.9276              1.9276
   44         796474.3906        861570.0625             0.9588              0.3433              0.3433
   45       20713174.7500     0.53393642E 09            24.9349              4.5839              4.5839
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Elementary (K-8)

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CORRELATION MATRIX       ALL VARIABLES

                    1            2            3            4            5            6            7

  1          1.000000     0.172889    -0.048920    -0.020430    -0.006146    -0.020814     0.017176
  2          0.172889     1.000000    -0.147739    -0.123998     0.043469    -0.017780    -0.127772
  3         -0.048920    -0.147739     1.000000    -0.037930     0.059668     0.796380     0.051557
  4         -0.020430    -0.123998    -0.037930     1.000000     0.029074    -0.043519     0.294468
  5         -0.006146     0.043469     0.059669     0.029074     1.000000     0.054091     0.196360
  6         -0.020814    -0.017780     0.796380    -0.043519     0.054091     1.000000     0.037937
  7          0.017176    -0.127772     0.051557     0.294468     0.196360     0.037937     1.000000
  8          0.036051    -0.225279     0.093784     0.172299     0.122891     0.072281     0.492074
  9          0.033931    -0.270971     0.119685     0.098477     0.086882     0.092409     0.334818
 10         -0.140112    -0.063529     0.062800     0.105542    -0.080068     0.060265     0.048771
 11         -0.023966    -0.118152     0.039748     0.099891     0.029475     0.034597     0.100563
 12         -0.042875    -0.135232     0.078043     0.095536     0.192945     0.062804     0.110808
 13         -0.021950    -0.034957     0.519799    -0.094223     0.015688     0.543183     0.013690
 14         -0.011589     0.083780     0.050525     0.008264     0.820269     0.056338     0.163119
 15          0.020394     0.050445     0.033325     0.065994     0.185716     0.031850     0.090315
 16         -0.108065     0.225879     0.025841     0.079324    -0.015330     0.055759     0.042495
 17          0.177327     0.606655    -0.189581    -0.149119    -0.019144    -0.082181    -0.155807
 18          0.131203     0.585866    -0.256999    -0.085959    -0.039729    -0.154434    -0.099692
 19          0.052864     0.293080    -0.110154     0.009764    -0.034925    -0.071842    -0.034142
 20         -0.035794     0.098896    -0.043636    -0.096026     0.119552    -0.025740    -0.051600
 21         -0.069588     0.018443    -0.012471    -0.014870    -0.084687    -0.003799    -0.026168
 22          0.002963     0.095014    -0.004522    -0.018410    -0.132139     0.013568    -0.027108
 23         -0.090202     0.275546     0.061895     0.196365     0.078944     0.099108     0.070886
 24          0.035209     0.008567    -0.009671     0.005298     0.146704    -0.004505     0.053723
 25          0.014004     0.002714     0.000032    -0.003125     0.126890     0.000110     0.032697
 26          0.000592     0.258627    -0.077754     0.040804     0.023332    -0.033995     0.010237
 27          0.016654     0.023262     0.040703    -0.002743     0.041065     0.049905     0.030972
 28          0.142315     0.038338    -0.007845     0.000901     0.063930     0.002366     0.025096
 29         -0.102242    -0.131159     0.073941     0.031238    -0.076527     0.042885    -0.003907
 30          0.060550    -0.044279    -0.012813     0.075188     0.004277    -0.014175     0.086898
 31         -0.003714     0.006904    -0.002649     0.080399     0.149309     0.005010     0.103638
 32         -0.067297    -0.107966     0.031893     0.070538     0.100499     0.020123     0.085925
 33          0.037292     0.079369    -0.028546    -0.018796     0.052623    -0.009904     0.004984
 34          0.003464     0.040027     0.039079    -0.031288     0.647417     0.041142     0.107835
 35         -0.057011    -0.049526    -0.026546    -0.017458    -0.219013    -0.021102    -0.061488
 36         -0.059081    -0.035819    -0.011519     0.014310    -0.245788    -0.011180    -0.050293
 37         -0.037257     0.167975    -0.036971    -0.106665    -0.061716    -0.011200    -0.070526
 38          0.037099     0.214251    -0.002110    -0.052014    -0.164566     0.028226    -0.054704
 39         -0.082743     0.489691    -0.107440    -0.119639    -0.111425    -0.033522    -0.167772
 40          0.037942    -0.026720     0.031127    -0.031629    -0.103344     0.031371    -0.047500
 41         -0.006495    -0.061391    -0.000322     0.125809     0.088049    -0.005068     0.086091
 42          0.024952    -0.116431     0.034984     0.039797     0.140600     0.013595     0.062946
 43         -0.043006     0.009901     0.014873    -0.018976    -0.096619     0.012895    -0.025357
 44          0.001567    -0.005199    -0.004396    -0.013857     0.048460     0.000347     0.000328
 45          0.026831    -0.011554     0.071687     0.127316     0.403338     0.060543     0.188393
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Elementary (K-8)

CORRELATION MATRIX   ALL VARIABLES

	8	9	10	11	12	13	14
1	0.036051	0.033931	-0.140112	-0.023966	-0.042874	-0.021950	-0.011589
2	-0.225279	-0.270971	-0.063529	-0.118152	-0.135231	-0.034957	0.083780
3	0.093784	0.119685	0.062800	0.039748	0.078043	0.519799	0.050525
4	0.172299	0.098477	0.105542	0.099891	0.095536	-0.094223	0.008264
5	0.122891	0.086882	-0.080067	0.029475	0.192945	0.015688	0.820269
6	0.072281	0.092409	0.060265	0.034597	0.062804	0.543183	0.056338
7	0.492074	0.334818	0.048771	0.100563	0.110808	0.013690	0.163119
8	1.000000	0.560303	0.049381	0.112347	0.116628	0.056913	0.096464
9	0.560303	1.000000	0.032020	0.099507	0.112906	0.072270	0.069596
10	0.049381	0.032020	1.000000	0.105645	0.072938	0.016883	-0.078584
11	0.112347	0.099507	0.105645	1.000000	0.319284	0.011365	0.002432
12	0.116628	0.112906	0.072938	0.319284	1.000000	0.069112	0.159316
13	0.056913	0.072270	0.016883	0.011365	0.069112	1.000000	0.026211
14	0.096464	0.069596	-0.078584	0.002432	0.159316	0.026211	1.000000
15	0.064886	0.045928	0.058347	0.147661	0.186845	0.032970	0.201998
16	-0.005376	-0.015404	0.078940	0.056813	0.011141	0.052084	-0.007432
17	-0.216258	-0.258091	-0.001922	-0.147296	-0.165419	-0.044163	0.019289
18	-0.158038	-0.195183	-0.015038	-0.119192	-0.138066	-0.098160	-0.010181
19	-0.072368	-0.086377	0.255540	-0.048294	-0.046118	-0.080317	-0.024786
20	-0.048433	-0.050070	-0.028933	-0.024261	0.021675	-0.013710	0.116875
21	-0.014205	-0.017088	0.063737	0.005547	-0.007427	-0.010408	-0.075942
22	-0.011723	-0.013238	0.033575	-0.011666	-0.014559	0.004670	-0.108396
23	-0.034171	-0.058459	0.336232	0.021434	0.048023	0.032657	0.082167
24	0.054688	0.039181	-0.005434	-0.005149	0.026673	0.000135	0.127213
25	0.039763	0.030189	0.010710	-0.012576	0.016382	0.005755	0.109628
26	-0.049262	-0.075407	0.107333	-0.039933	-0.034787	-0.043107	0.031926
27	0.047506	0.047920	0.129389	0.035793	0.039791	0.014132	0.046420
28	0.014673	0.010747	-0.047452	-0.019052	0.002096	-0.019200	0.055020
29	-0.000826	0.000932	0.047873	0.033082	0.013478	0.031257	-0.076427
30	0.081689	0.049908	-0.000318	0.036134	0.025066	-0.024042	0.009342
31	0.082621	0.057673	0.040781	0.051276	0.055745	-0.015698	0.148332
32	0.081965	0.059574	0.061256	0.072509	0.076527	0.010543	0.092079
33	0.015648	0.016981	0.028007	-0.019588	-0.009165	-0.018842	0.041737
34	0.083001	0.064695	-0.075117	0.009112	0.096246	0.024056	0.613189
35	-0.051522	-0.043968	0.021733	-0.009079	-0.039862	-0.018452	-0.209843
36	-0.039182	-0.048501	0.046597	0.006582	-0.022976	-0.025912	-0.218519
37	-0.061229	-0.046189	0.092721	-0.032836	-0.062940	0.010188	-0.053784
38	-0.042821	-0.043328	0.085956	-0.041672	-0.093657	0.027535	-0.155205
39	-0.214253	-0.207771	0.066927	-0.088271	-0.114445	-0.043115	-0.078337
40	0.000072	0.013400	-0.004959	-0.002399	0.000202	0.019744	-0.110576
41	0.043115	0.019614	-0.010317	0.019133	0.040128	-0.003430	0.066242
42	0.059701	0.068659	0.014056	0.035810	0.042124	0.023941	0.120667
43	-0.003828	0.006484	0.078787	0.002371	-0.007536	0.013033	-0.092821
44	0.013924	0.016070	-0.014647	0.001514	0.009854	0.004962	0.042779
45	0.133531	0.132270	0.050543	0.104098	0.131354	0.012224	0.371912

Elementary (K-8)

```
 CORRELATION MATRIX      ALL VARIABLES

                    15             16             17             18             19             20             21

   1          0.020394      -0.108065       0.177327       0.131203       0.052864      -0.035794      -0.069588
   2          0.050445       0.225879       0.806655       0.585866       0.293080       0.098896       0.018443
   3          0.033325       0.025841      -0.189581      -0.256999      -0.110154      -0.043636      -0.012471
   4          0.065994       0.079324      -0.149119      -0.085959       0.009764      -0.096026      -0.014870
   5          0.185716      -0.015330      -0.019144      -0.039729      -0.034925       0.119552      -0.084687
   6          0.031850       0.055759      -0.082181      -0.154434      -0.071843      -0.025740      -0.003799
   7          0.090325       0.042495      -0.155807      -0.099692      -0.034142      -0.051600      -0.026168
   8          0.064886      -0.005376      -0.216258      -0.158038      -0.072368      -0.048433      -0.014205
   9          0.045928      -0.015404      -0.258091      -0.195183      -0.086377      -0.050070      -0.017088
  10          0.058347       0.078940      -0.001922      -0.015038       0.255540      -0.028933       0.063737
  11          0.147661       0.056813      -0.147296      -0.119192      -0.048294      -0.024261       0.005547
  12          0.186845       0.011141      -0.165419      -0.138066      -0.046118       0.021675      -0.007427
  13          0.032970       0.052084      -0.044163      -0.098160      -0.080317      -0.013710      -0.010408
  14          0.201998      -0.007432       0.019289      -0.010181      -0.024786       0.116875      -0.075942
  15          1.000000       0.072106       0.021224       0.000052       0.024567       0.038931      -0.002785
  16          0.072106       1.000000       0.186910       0.129359       0.127233       0.012105       0.100651
  17          0.021224       0.186910       1.000000       0.712046       0.342272       0.070886       0.025270
  18          0.000052       0.129359       0.712046       1.000000       0.281215       0.049531       0.027289
  19          0.024567       0.127233       0.342272       0.281215       1.000000       0.017690       0.036732
  20          0.038931       0.012105       0.070886       0.049531       0.017691       1.000000       0.007091
  21         -0.002785       0.100651       0.025270       0.027289       0.036732       0.007091       1.000000
  22          0.003823       0.119607       0.087743       0.043003       0.033520      -0.004632       0.102948
  23          0.109506       0.355492       0.321227       0.249228       0.328489      -0.046742       0.025603
  24          0.050280      -0.029604       0.013011       0.014347       0.035174       0.027636      -0.014570
  25          0.029552      -0.041725       0.007334       0.009755       0.028687       0.037670      -0.008140
  26          0.034990       0.166573       0.278115       0.281751       0.273066      -0.005403       0.020076
  27          0.033058       0.035238       0.032086       0.025415       0.045804       0.009433       0.015845
  28          0.030887      -0.049800       0.015596       0.008347       0.011006       0.018965      -0.029464
  29         -0.017910       0.017949      -0.121422      -0.123841      -0.062917      -0.056468       0.030495
  30          0.033121      -0.039895      -0.036026      -0.021454      -0.011423      -0.020710      -0.011612
  31          0.057699       0.020106       0.003738       0.015845       0.021312      -0.000794      -0.015136
  32          0.050353       0.008940      -0.100580      -0.068927      -0.006240      -0.001728       0.008862
  33          0.037918      -0.029227       0.090734       0.073853       0.078353       0.035492      -0.000005
  34          0.111330      -0.073817       0.000713      -0.018420      -0.017760       0.096309      -0.074903
  35         -0.059747       0.017691      -0.025659       0.019176      -0.010360      -0.017992       0.041280
  36         -0.051649       0.051121      -0.002120       0.022312      -0.000428      -0.023469       0.055024
  37         -0.009619       0.085130       0.195175       0.171036       0.149905       0.041269       0.063147
  38          0.000018       0.119480       0.215848       0.155846       0.138862      -0.014163       0.081291
  39          0.007103       0.193822       0.437648       0.335314       0.220546       0.072265       0.054337
  40          0.002010       0.016238      -0.032411      -0.051714      -0.037693      -0.024566       0.023112
  41          0.024340       0.041808      -0.068523      -0.040374      -0.007979      -0.040682      -0.019773
  42          0.031699      -0.037457      -0.111079      -0.080551      -0.023696      -0.024060      -0.033274
  43         -0.013751       0.053937       0.037015       0.017140       0.029309      -0.000087       0.049593
  44         -0.005890      -0.031066       0.014007       0.020342       0.010692       0.020976      -0.001779
  45          0.154982       0.044912      -0.082893      -0.070205       0.009558       0.023428      -0.058977
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Elementary (K-8)

CORRELATION MATRIX   ALL VARIABLES

	22	23	24	25	26	27	28
1	0.002963	-0.090202	0.035209	0.014004	0.000592	0.016654	0.142315
2	0.095014	0.275546	0.008567	0.002714	0.258627	0.023262	0.038338
3	-0.004522	0.061895	-0.009671	0.000032	-0.077754	0.040703	-0.007845
4	-0.018410	0.196365	0.005298	-0.003125	0.040804	-0.002743	0.000901
5	-0.132139	0.078944	0.146704	0.126890	0.023331	0.041065	0.063930
6	0.013568	0.099108	-0.004505	0.000110	-0.033995	0.049905	0.002366
7	-0.027108	0.070886	0.053723	0.032697	0.010237	0.030972	0.025096
8	-0.011723	-0.034171	0.054688	0.039763	-0.049262	0.047506	0.014673
9	-0.013238	-0.058459	0.039181	0.030189	-0.075407	0.047920	0.010747
10	0.033575	0.336232	-0.005434	0.010710	0.107333	0.129389	-0.047452
11	-0.011666	0.021434	-0.005149	-0.012576	-0.039933	0.035793	-0.019052
12	-0.014559	0.048023	0.026673	0.016382	-0.034787	0.039791	0.002096
13	0.004670	0.032657	0.000135	0.005755	-0.043107	0.014132	-0.019200
14	-0.108398	0.082167	0.127213	0.109628	0.031926	0.046420	0.055020
15	0.003823	0.109506	0.050280	0.029552	0.034990	0.033058	0.030887
16	0.119607	0.355492	-0.029604	-0.041725	0.166573	0.035238	-0.049800
17	0.087743	0.321227	0.013011	0.007334	0.278115	0.032086	0.015596
18	0.043003	0.249228	0.014347	0.009755	0.281751	0.025415	0.008347
19	0.033520	0.328489	0.035174	0.028687	0.273066	0.045804	0.011006
20	-0.004632	-0.046742	0.027636	0.037670	-0.005403	0.009433	0.018965
21	0.102948	0.025603	-0.014570	-0.008140	0.020076	0.015845	-0.029464
22	1.000000	0.051194	-0.039110	-0.059738	0.040627	0.027017	0.026958
23	0.051194	1.000000	0.008640	-0.003741	0.423006	0.040951	-0.030467
24	-0.039110	0.008640	1.000000	0.699195	0.029938	0.024863	0.158839
25	-0.059738	-0.003741	0.699195	1.000000	0.010680	0.032662	0.098033
26	0.040627	0.423006	0.029939	0.010680	1.000000	0.018769	0.004382
27	0.027017	0.040951	0.024863	0.032662	0.018769	1.000000	0.008877
28	0.026958	-0.030467	0.158839	0.098033	0.004382	0.008877	1.000000
29	0.020942	-0.018536	-0.209441	-0.198109	-0.038655	0.010738	-0.164854
30	-0.016601	-0.018188	0.028104	0.024886	-0.003678	0.016169	0.050345
31	-0.042985	0.058936	0.045142	0.041745	0.027585	0.038798	-0.019694
32	-0.099149	0.018612	0.049764	0.058433	-0.001047	0.060361	-0.074471
33	-0.018882	0.001535	0.409619	0.454794	0.027036	0.045387	0.103820
34	-0.151574	-0.026299	0.284863	0.310135	0.009761	0.038744	0.056375
35	0.090155	-0.046248	-0.355826	-0.351001	-0.009403	-0.023935	-0.094380
36	0.106676	0.000411	-0.406022	-0.361589	-0.001985	-0.006261	-0.177922
37	0.064475	0.059699	0.052017	0.056358	0.116660	0.066942	0.056654
38	0.121137	0.079652	0.039689	0.025794	0.104900	0.089481	0.060108
39	0.100830	0.186558	0.023768	0.015448	0.187882	0.018291	0.170758
40	0.055766	-0.062950	0.005527	0.015829	-0.059390	0.017457	0.034292
41	-0.035281	0.136420	0.004987	-0.013181	0.050722	-0.015019	0.001901
42	-0.062427	0.018618	0.032346	0.025141	-0.019581	0.002032	0.015319
43	0.109675	0.024727	-0.027275	-0.021029	0.008689	0.038847	0.003609
44	-0.068889	-0.022267	0.151002	0.142334	0.010280	0.013724	0.018547
45	-0.113720	0.158671	0.052783	0.030585	0.066481	0.079071	0.001817

Elementary (K-8)

CORRELATION MATRIX ALL VARIABLES

	29	30	31	32	33	34	35
1	-0.102242	0.060550	-0.003714	-0.067297	0.037292	0.003464	-0.057011
2	-0.131159	-0.044279	0.006904	-0.107966	0.079369	0.040027	-0.049526
3	0.073941	-0.012813	-0.002649	0.031893	-0.028546	0.039079	-0.026546
4	0.031238	0.075188	0.080399	0.070538	-0.018796	-0.031288	-0.017458
5	-0.076527	0.004277	0.149309	0.100499	0.052623	0.647417	-0.219013
6	0.042885	-0.014175	0.005010	0.020123	-0.009904	0.041142	-0.021102
7	-0.003907	0.086898	0.103638	0.085925	0.004984	0.107835	-0.061488
8	-0.000826	0.081689	0.082621	0.081965	0.015648	0.083001	-0.051522
9	0.000932	0.049908	0.057673	0.059574	0.016981	0.064695	-0.043968
10	0.047873	-0.000318	0.040781	0.061256	0.028007	-0.075117	0.021733
11	0.033082	0.036134	0.051276	0.072509	-0.019588	0.009112	-0.009079
12	0.013478	0.025066	0.055745	0.076527	-0.009165	0.096246	-0.039862
13	0.031257	-0.024042	-0.015698	0.010543	-0.018842	0.024056	-0.018452
14	-0.076427	0.009342	0.148332	0.092079	0.041737	0.613189	-0.209843
15	-0.017910	0.033121	0.057699	0.050353	0.037918	0.111330	-0.059747
16	0.017949	-0.039895	0.020106	0.008940	-0.029227	-0.073817	0.017691
17	-0.121422	-0.036026	0.003738	-0.100580	0.090734	0.000713	-0.025659
18	-0.123841	-0.021454	0.015845	-0.068927	0.073853	-0.018420	0.019176
19	-0.062917	-0.011423	0.021312	-0.006240	0.078353	-0.017760	-0.010360
20	-0.056468	-0.020710	-0.000794	-0.001728	0.035492	0.096309	-0.017992
21	0.030495	-0.011612	-0.015136	0.008862	-0.000005	-0.074903	0.041280
22	0.020942	-0.016601	-0.042985	-0.099149	-0.018882	-0.151574	0.090155
23	-0.018536	-0.018188	0.058936	0.018612	0.001535	-0.026299	-0.046248
24	-0.209441	0.028104	0.045142	0.049764	0.409619	0.284863	-0.355826
25	-0.198109	0.024886	0.041745	0.058433	0.454794	0.310135	-0.351001
26	-0.038655	-0.003678	0.027585	-0.001047	0.027036	0.009761	-0.009403
27	0.010738	0.016169	0.038798	0.060361	0.045387	0.038744	-0.023935
28	-0.164854	0.050345	-0.019694	-0.074471	0.103820	0.056375	-0.094380
29	1.000000	-0.002305	0.001952	0.060480	-0.268405	-0.120701	0.156876
30	-0.002305	1.000000	0.081072	0.160992	0.038346	0.015550	-0.030641
31	0.001952	0.081072	1.000000	0.159616	0.053244	0.126592	-0.052362
32	0.060480	0.160992	0.159616	1.000000	0.061057	0.108145	-0.046730
33	-0.268405	0.038346	0.053244	0.061057	1.000000	0.174588	-0.249906
34	-0.120701	0.015550	0.126592	0.108145	0.174588	1.000000	-0.301016
35	0.156876	-0.030641	-0.052362	-0.046730	-0.249906	-0.301016	1.000000
36	0.275761	-0.009684	-0.035343	-0.020622	-0.304785	-0.326223	0.576816
37	-0.034918	-0.043435	-0.018021	-0.021067	0.078730	-0.010773	0.015340
38	-0.022535	-0.026890	-0.050525	-0.049832	0.083467	-0.096666	0.005847
39	-0.107818	-0.046897	-0.045092	-0.090944	0.084580	-0.072693	0.020211
40	-0.000825	-0.005415	-0.077153	-0.032487	0.044259	-0.066215	0.024661
41	-0.002739	-0.003355	0.038794	0.016735	-0.035144	0.020266	-0.022173
42	-0.012913	-0.000215	0.031968	0.070997	-0.008570	0.110571	-0.046133
43	0.030250	-0.012533	-0.030544	-0.032817	0.007245	-0.088132	0.074887
44	-0.039879	0.021435	0.032854	0.187174	0.086998	0.112021	-0.089240
45	-0.032523	0.023030	0.118809	0.145210	-0.031052	0.286170	-0.140000

Elementary (K-8)

CORRELATION MATRIX   ALL VARIABLES

	36	37	38	39	40	41	42
1	-0.059081	-0.037257	0.037099	-0.082743	0.037942	-0.006495	0.024952
2	-0.035819	0.167975	0.214251	0.489691	-0.026720	-0.061391	-0.116431
3	-0.011519	-0.036971	-0.002110	-0.107440	0.031127	-0.000322	0.034984
4	0.014310	-0.106665	-0.052014	-0.119639	-0.031629	0.125809	0.039797
5	-0.245788	-0.061716	-0.164566	-0.111425	-0.103344	0.088048	0.140600
6	-0.011180	-0.011200	0.028226	-0.033522	0.031371	-0.005068	0.013595
7	-0.050293	-0.070526	-0.054704	-0.167772	-0.047500	0.086091	0.062946
8	-0.039182	-0.061229	-0.042821	-0.214253	0.000072	0.043115	0.059701
9	-0.048501	-0.046189	-0.043328	-0.207771	0.013400	0.019614	0.068659
10	0.046597	0.092721	0.085956	0.066927	-0.004959	-0.010317	0.014056
11	0.006582	-0.032836	-0.041672	-0.088271	-0.002399	0.019133	0.035810
12	-0.022976	-0.062940	-0.093657	-0.114445	0.000202	0.040128	0.042124
13	-0.025912	0.010188	0.027535	-0.043115	0.019744	-0.003430	0.023941
14	-0.218519	-0.053784	-0.155205	-0.078337	-0.110576	0.066242	0.120667
15	-0.051649	-0.009619	0.000018	0.007103	0.002010	0.024340	0.031699
16	0.051121	0.085130	0.119480	0.193822	0.016238	0.041808	-0.037457
17	-0.002120	0.195175	0.215848	0.437648	-0.032411	-0.068523	-0.111079
18	0.022312	0.171036	0.155846	0.335314	-0.051714	-0.040374	-0.080551
19	-0.000428	0.149905	0.138862	0.220546	-0.037693	-0.007979	-0.023696
20	-0.023469	0.041269	-0.014163	0.072265	-0.024566	-0.040682	-0.024060
21	0.055024	0.063147	0.081291	0.054337	0.023112	-0.019773	-0.033274
22	0.106676	0.064475	0.121137	0.100830	0.055766	-0.035281	-0.062427
23	0.000411	0.059699	0.079652	0.186558	-0.062950	0.136420	0.018818
24	-0.406022	0.052017	0.039689	0.023768	0.005527	0.004987	0.032346
25	-0.361589	0.056358	0.025794	0.015448	0.015829	-0.013181	0.025141
26	-0.001985	0.116660	0.104900	0.187882	-0.059390	0.050722	-0.019581
27	-0.006261	0.066942	0.089481	0.018291	0.017457	-0.015019	0.002032
28	-0.177922	0.056654	0.060108	0.170758	0.034292	0.001901	0.015319
29	0.275761	-0.034918	-0.022535	-0.107818	-0.000825	-0.002740	-0.012913
30	-0.009684	-0.043435	-0.026890	-0.046897	-0.005415	-0.003355	-0.000215
31	-0.035343	-0.018021	-0.050525	-0.045092	-0.077153	0.038794	0.031968
32	-0.020622	-0.021067	-0.049832	-0.090944	-0.032487	0.016735	0.070997
33	-0.304785	0.078730	0.083467	0.084580	0.044259	-0.035144	-0.008570
34	-0.326223	-0.010773	-0.096666	-0.072693	-0.066215	0.020266	0.110571
35	0.576816	0.015340	0.005847	0.020211	0.024661	-0.022173	-0.046133
36	1.000000	0.008951	0.014956	-0.009239	0.035210	-0.015589	-0.096547
37	0.008951	1.000000	0.258895	0.211600	0.050293	-0.079143	-0.008549
38	0.014956	0.258895	1.000000	0.233907	0.162645	-0.074795	-0.046614
39	-0.009239	0.211600	0.233907	1.000000	0.041867	-0.084289	-0.096094
40	0.035210	0.050293	0.162645	0.041867	1.000000	-0.030070	0.005611
41	-0.015589	-0.079143	-0.074795	-0.084289	-0.030070	1.000000	0.030493
42	-0.096547	-0.008549	-0.046614	-0.096094	0.005611	0.030493	1.000000
43	0.097908	0.091784	0.144306	0.063446	0.154606	-0.072818	-0.031299
44	-0.096427	0.019571	0.001023	0.000797	0.007485	-0.004458	0.030613
45	-0.158469	-0.054013	-0.081588	-0.103229	-0.089667	0.109885	0.206502

Elementary (K-8)

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CORRELATION MATRIX       ALL VARIABLES

                        43                44                45

       1            -0.043006          0.001567          0.026831
       2             0.009901         -0.005199         -0.011554
       3             0.014873         -0.004396          0.071687
       4            -0.018976         -0.013857          0.127316
       5            -0.096619          0.048460          0.403338
       6             0.012895          0.000347          0.060543
       7            -0.025357          0.000328          0.188393
       8            -0.003828          0.013924          0.133531
       9             0.006484          0.016070          0.132270
      10             0.078787         -0.014647          0.050543
      11             0.002371          0.001515          0.104099
      12            -0.007536          0.009854          0.131354
      13             0.013033          0.004962          0.012224
      14            -0.092621          0.042779          0.371913
      15            -0.013751         -0.005890          0.154982
      16             0.053937         -0.031066          0.044912
      17             0.037015          0.014007         -0.082893
      18             0.017140          0.020342         -0.070205
      19             0.029309          0.010692          0.009558
      20            -0.000087          0.020976          0.023428
      21             0.049593         -0.001779         -0.058977
      22             0.109675         -0.068889         -0.113720
      23             0.024727         -0.022267          0.158672
      24            -0.027275          0.151002          0.052783
      25            -0.021029          0.142334          0.030585
      26             0.008689          0.010280          0.066481
      27             0.038847          0.013724          0.079071
      28             0.003609          0.018547          0.001817
      29             0.030250         -0.039879         -0.032523
      30            -0.012533          0.021435          0.023030
      31            -0.030544          0.032854          0.118809
      32            -0.032817          0.187174          0.145210
      33             0.007245          0.086998         -0.031052
      34            -0.088132          0.112021          0.288170
      35             0.074887         -0.089240         -0.140000
      36             0.097908         -0.096427         -0.158469
      37             0.091784          0.019571         -0.054013
      38             0.144306          0.001023         -0.081588
      39             0.063446          0.000797         -0.103229
      40             0.154606          0.007485         -0.089667
      41            -0.072818         -0.004458          0.109885
      42            -0.031299          0.030613          0.206502
      43             1.000000         -0.021087         -0.092222
      44            -0.021087          1.000000          0.004876
      45            -0.092222          0.004876          1.000000
```

Table VII.1 - Amount and Cumulative Percent of Variance Accounted for by Principal Components for Elementary and Secondary Teachers

ELEMENTARY

INDEX	ROOT	PER CENT
1	3.9914	11.09
2	3.0018	19.43
3	2.3269	25.89
4	2.1266	31.80
5	1.5679	36.15
6	1.4087	40.06
7	1.2868	43.64
8	1.2284	47.05
9	1.0598	50.00
10	1.0248	52.84
11	1.0057	55.64
12	0.9760	58.35
13	0.9293	60.93
14	0.9038	63.44
15	0.8924	65.92
16	0.8786	68.36
17	0.8611	70.75
18	0.8409	73.09
19	0.8185	75.36
20	0.7899	77.55
21	0.7871	79.74
22	0.7191	81.74
23	0.7018	83.69
24	0.6742	85.56
25	0.6438	87.35
26	0.6066	89.03
27	0.5892	90.67
28	0.5799	92.28
29	0.5338	93.76
30	0.4442	95.00
31	0.4073	96.13
32	0.3910	97.22
33	0.3606	98.22
34	0.2901	99.02
35	0.1961	99.57
36	0.1557	100.00

SECONDARY

INDEX	ROOT	PER CENT
1	4.2339	11.76
2	3.0077	20.12
3	2.3518	26.65
4	2.1435	32.60
5	1.6170	37.09
6	1.5384	41.37
7	1.3420	45.10
8	1.1424	48.27
9	1.0789	51.27
10	1.0290	54.12
11	0.9976	56.90
12	0.9737	59.60
13	0.9235	62.16
14	0.8977	64.66
15	0.8717	67.08
16	0.8633	69.48
17	0.8393	71.81
18	0.8096	74.06
19	0.7742	76.21
20	0.7499	78.29
21	0.7360	80.34
22	0.7002	82.28
23	0.6830	84.18
24	0.6749	86.05
25	0.6393	87.83
26	0.6267	89.57
27	0.5604	91.13
28	0.5350	92.61
29	0.5179	94.05
30	0.4319	95.25
31	0.3953	96.35
32	0.3787	97.40
33	0.3227	98.30
34	0.2960	99.12
35	0.1766	99.61
36	0.1404	100.00

Elementary (K-8)

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VARIMAX FACTORS
                        8              9              10             11

      2            -0.027637      -0.052017       0.038658      -0.018535
      3             0.009249      -0.010519      -0.000143      -0.007288
      4             0.156978      -0.137731       0.018416       0.351871
      6             0.016745      -0.021343       0.012688      -0.012964
      7             0.110262      -0.062492      -0.005435       0.131904
      8             0.047046       0.016943       0.001119      -0.042765
      9            -0.021224       0.039292      -0.020791      -0.123271
     10             0.010392       0.034103       0.063688      -0.339897
     11             0.026569       0.038299       0.000996      -0.075189
     12             0.011091       0.033857      -0.018104       0.006765
     13            -0.022253       0.052799      -0.007133      -0.018201
     15             0.064359      -0.067951       0.024521       0.064610
     17            -0.017193       0.022388       0.032673      -0.059282
     18             0.013625       0.066781       0.009510      -0.037600
     19            -0.017976       0.020007      -0.023091      -0.204889
     21             0.068333       0.189298       0.704485      -0.086475
     22            -0.081490      -0.127783       0.648069       0.021050
     23             0.005380       0.016664       0.015923       0.088130
     24             0.060312       0.030400       0.056566       0.003624
     25             0.066810       0.099876       0.064667      -0.010162
     26             0.003532       0.037933      -0.020920       0.059307
     27             0.117286      -0.070818       0.005140      -0.648559
     28             0.012515      -0.741511      -0.061492      -0.088708
     29             0.109063       0.313464       0.073406       0.000276
     30             0.652252      -0.361504       0.071339       0.112982
     31             0.478970       0.017398       0.077768      -0.060658
     32             0.683337       0.231782      -0.140414      -0.080604
     33             0.096472      -0.028353       0.078782      -0.089068
     35             0.019681       0.070214       0.130393      -0.034522
     36             0.064942       0.180870       0.162449      -0.009516
     37            -0.049046      -0.001531       0.041425      -0.539123
     38            -0.040719      -0.089647       0.116799      -0.352070
     39            -0.042845      -0.267158       0.063770      -0.185121
     40            -0.047888      -0.048003      -0.069809       0.048977
     43            -0.025095       0.029086       0.141037      -0.034619
     44             0.349619       0.323542      -0.297700      -0.031515
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Elementary (K-8)

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 VARIMAX FACTORS

                   1           2           3           4           5           6           7

    2       0.864398    0.035081    0.006783   -0.141518    0.088390   -0.007961   -0.010661
    3      -0.177718   -0.007636    0.886529    0.039721    0.029492    0.019437    0.015577
    4      -0.202771   -0.024866   -0.131873    0.271074    0.427363    0.093178    0.037374
    6      -0.043176   -0.003506    0.905928    0.033917    0.041159    0.022177    0.017455
    7      -0.059450    0.028468    0.000480    0.730793    0.129258    0.082104   -0.041218
    8      -0.121230    0.034292    0.043961    0.844688   -0.030336    0.061225    0.007542
    9      -0.178173    0.035497    0.074538    0.755417   -0.084400    0.046660    0.016340
   10      -0.208510   -0.018109    0.030880   -0.027878    0.658715    0.096498    0.052005
   11      -0.133987   -0.031449   -0.024034    0.051400    0.015721    0.706662    0.014003
   12      -0.135043    0.020773    0.046955    0.055639    0.017242    0.734449   -0.015690
   13       0.015437    0.007759    0.772021    0.032688   -0.064141    0.036126    0.013555
   15       0.126359    0.054318    0.043897    0.057353    0.036216    0.593672    0.007760
   17       0.882138    0.027711   -0.046643   -0.128121    0.140090   -0.060992   -0.000168
   18       0.788298    0.009038   -0.158574   -0.042195    0.114264   -0.065062   -0.025136
   19       0.292398    0.045575   -0.105451   -0.050579    0.545330   -0.060913    0.003639
   21      -0.002425    0.031255   -0.018013   -0.043335    0.006342   -0.005553   -0.007749
   22       0.099539   -0.077475    0.023557    0.020705    0.003584    0.017095    0.156189
   23       0.276916    0.003548    0.127256    0.011909    0.759807    0.098726   -0.030926
   24      -0.025539    0.807436   -0.014545    0.021370    0.026774   -0.004003    0.067313
   25      -0.043972    0.807304   -0.009008   -0.003391    0.023972   -0.025913    0.075991
   26       0.336581    0.022899   -0.027190    0.013888    0.536379   -0.049355   -0.003654
   27      -0.038878   -0.006219    0.025339    0.064387    0.064367    0.075836   -0.109170
   28       0.019564    0.176672   -0.006028   -0.002644   -0.049815    0.002916    0.079097
   29      -0.187158   -0.394207    0.062987   -0.044938    0.053648   -0.009566    0.040870
   30      -0.036108   -0.028351   -0.019377    0.040927   -0.019636   -0.025856    0.025923
   31       0.053869    0.037267   -0.001870    0.110196    0.035496    0.086585   -0.245537
   32      -0.099533    0.048033    0.017458    0.014349    0.037470    0.069684    0.014232
   33       0.067577    0.644925   -0.032527   -0.003316    0.009585   -0.019644    0.108267
   35      -0.009158   -0.641174   -0.052493   -0.038171   -0.028917   -0.068984    0.163826
   36      -0.003701   -0.692435   -0.039166   -0.028835    0.025654   -0.042639    0.176723
   37       0.208705    0.050129   -0.020479   -0.021818    0.061301   -0.068309    0.222505
   38       0.240191    0.032795    0.040582    0.014844    0.083939   -0.082544    0.455339
   39       0.521098    0.025204   -0.016768   -0.229965    0.126766   -0.032004    0.160792
   40      -0.042641    0.009526    0.024725   -0.020206   -0.092288    0.046713    0.712994
   43      -0.005612   -0.062294    0.002022    0.009116    0.069787    0.005082    0.585566
   44       0.067323    0.217107    0.002460   -0.010472   -0.078411   -0.014929    0.199507
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Secondary (9-12)

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ALL VARIABLES

THE NUMBER OF OBSERVATIONS IS     556678.

VARIABLE        SUMS          SUMS OF SQUARES          MEAN          SIGMA(N)        SIGMA(N-1)
    1       257455.2188        257455.2148            0.4625          0.4986           0.4986
    2     20064651.2500     0.80364739E 09           36.0436         12.0213          12.0213
    3      1039148.3516       2288532.1250            1.8667          0.7915           0.7915
    4      1582881.2969       5931974.1875            2.8434          1.6034           1.6034
    5     27655875.7500     0.13800361E 10           49.6802          3.3066           3.3066
    6      1090161.5156       2477554.6563            1.9583          0.7846           0.7846
    7      4091413.0938      33391816.5000            7.3497          2.4426           2.4426
    8      1973779.1719       9463713.2500            3.5456          2.1045           2.1045
    9      2085365.4844       9787898.7500            3.7461          1.8840           1.8840
   10      1856505.1250       6391169.1250            3.3350          0.5991           0.5991
   11      3275998.2188      19799815.5000            5.8849          0.9673           0.9673
   12      1672468.1094       5398838.5000            3.0044          0.8198           0.8198
   13      1191602.6719       2802867.0313            2.1406          0.6730           0.6730
   14     46011716.5000     0.43024609E 10           82.6541         29.9519          29.9519
   15     40680834.0000     0.31986292E 10           73.0779         20.1383          20.1383
   16      7606805.2500     0.19544392E 09           13.6646         12.8206          12.8206
   17      5571125.5000     0.10939931E 09           10.0078          9.8166           9.8166
   18      3331819.0000      50184827.0000            5.9852          7.3708           7.3708
   19      1318898.2656       3472335.6563            2.3692          0.7902           0.7902
   20       360947.2695        360947.2695            0.6484          0.4775           0.4775
   21       149338.4141        364385.5195            0.2683          0.7633           0.7633
   22        69260.4414         97588.4248            0.1244          0.3998           0.3998
   23      3684884.4688      26147403.5000            6.6194          1.7759           1.7759
   24      1224037.5000       3124871.6250            2.1988          0.8824           0.8824
   25      1284690.9844       3378728.5938            2.3078          0.8623           0.8623
   26       801539.1172       1309676.8438            1.4399          0.5286           0.5286
   27       122404.6865        122404.6855            0.2199          0.4142           0.4142
   28      1649879.8906       5655906.9375            2.9638          1.1730           1.1730
   29       348457.1133        496831.3047            0.6260          0.7076           0.7076
   30      1266793.2188       3292989.0938            2.2756          0.8584           0.8585
   31      1859396.0469       8029035.0000            3.3402          1.8073           1.8073
   32       792125.3203       1291296.2813            1.4230          0.5430           0.5430
   33      1498719.2813       4562402.5000            2.6923          0.9734           0.9734
   34       410311.4102        380017.5625            0.7371          0.3733           0.3733
   35       925983.5781       2367767.0313            1.6634          1.2192           1.2192
   36      1929211.1719      10836485.0000            3.4656          2.7306           2.7306
   37       724648.4141       1211297.3281            1.3017          0.6938           0.6938
   38       721490.9688       1520132.6719            1.2961          1.0252           1.0252
   39      1580979.3906       5291092.8750            2.8400          1.1996           1.1996
   40      1275473.8281       3685022.0938            2.2912          1.1705           1.1705
   41      2524520.6250      12976341.8750            4.5350          1.6566           1.6566
   42       347580.5547        347580.5664            0.6244          0.4843           0.4843
   43       904063.0313       3565900.9375            1.6240          1.9412           1.9412
   44       560189.3828        622166.7266            1.0063          0.3240           0.3240
   45     14247642.1250     0.37457339E 09           25.5940          4.2211           4.2211
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Secondary (9-12)

CORRELATION MATRIX ALL VARIABLES

	1	2	3	4	5	6	7
1	1.000000	0.076286	-0.019242	0.000300	-0.056764	0.001012	0.115634
2	0.076286	1.000000	-0.135301	0.073398	0.024091	-0.013575	0.020433
3	-0.019242	-0.135301	1.000000	-0.161911	0.006427	0.814235	0.011024
4	0.000300	0.073398	-0.161911	1.000000	-0.053135	-0.149094	0.132464
5	-0.056764	0.024090	0.006427	-0.053135	1.000000	-0.000166	0.186520
6	0.001012	-0.013575	0.814235	-0.149094	-0.000166	1.000000	0.017450
7	0.115634	0.020433	0.011024	0.132464	0.186520	0.017450	1.000000
8	0.124831	-0.137893	0.066452	0.046454	0.082433	0.054131	0.517861
9	0.126155	-0.200770	0.103017	-0.022124	0.048662	0.085016	0.322880
10	-0.097366	0.248544	-0.015924	0.085026	0.046396	0.007612	0.036589
11	0.067782	0.041655	-0.020868	0.143792	0.011909	-0.016502	0.124439
12	-0.016539	-0.074326	0.038746	0.081916	0.164041	0.023347	0.096286
13	0.013042	-0.002481	0.526298	-0.189170	-0.011271	0.557166	0.024227
14	-0.045920	0.057749	0.008108	-0.071574	0.801995	0.011854	0.166422
15	0.040432	0.115293	-0.022509	0.070021	0.166789	-0.009855	0.092905
16	-0.095624	0.315192	-0.035842	0.156799	0.026041	0.003331	0.046355
17	0.086909	0.815305	-0.168306	0.030770	-0.010284	-0.057740	-0.006572
18	0.042665	0.642247	-0.234252	0.052124	-0.019956	-0.122368	-0.004857
19	-0.019120	0.359891	-0.082500	0.008038	-0.020722	-0.040061	-0.032875
20	-0.076452	-0.006934	-0.015458	-0.100724	0.136310	-0.018845	-0.023312
21	-0.122264	0.073481	0.008000	-0.016093	-0.049008	0.008001	-0.036216
22	-0.001981	0.131300	-0.008105	0.026397	-0.093692	0.011715	-0.016232
23	-0.189091	0.414519	-0.012337	0.223814	0.144572	0.034162	0.049909
24	-0.013770	-0.003550	-0.024265	-0.028256	0.157589	-0.021688	0.052425
25	-0.023907	-0.014008	-0.018663	-0.047631	0.122521	-0.012153	0.033084
26	-0.066847	0.311620	-0.105096	0.082585	0.057897	-0.072442	0.008420
27	0.112375	0.065091	0.020905	-0.015338	0.068630	0.022061	0.052618
28	0.165729	-0.020128	-0.012275	0.009738	0.040334	0.003179	0.040289
29	-0.113896	-0.101288	0.076308	0.020293	-0.051492	0.058402	-0.024720
30	0.077054	-0.082339	0.014573	0.071691	0.011022	-0.000424	0.067933
31	-0.015984	0.031575	-0.009155	0.088820	0.124811	0.003040	0.090377
32	-0.021469	-0.060627	0.023448	0.030743	0.081031	0.008172	0.072270
33	0.011980	0.057072	-0.026144	-0.052633	0.054902	-0.011469	0.042956
34	-0.042820	-0.007557	0.010774	-0.114794	0.607596	0.006129	0.105705
35	-0.058993	-0.038005	0.016974	-0.001229	-0.166707	0.010470	-0.070215
36	-0.028467	0.010991	0.003783	0.067483	-0.172718	0.010767	-0.038780
37	-0.052983	0.146691	-0.011670	-0.090158	-0.064362	0.004369	-0.030328
38	0.091626	0.210590	-0.007714	-0.028167	-0.134467	0.021101	0.000737
39	-0.208472	0.427416	-0.092313	0.052099	-0.042995	-0.036880	-0.075140
40	0.074964	-0.026741	0.047960	-0.018335	-0.101955	0.044032	-0.010577
41	-0.008786	-0.041476	-0.017560	0.075183	0.092729	-0.032345	0.041199
42	0.019460	-0.051533	0.025320	-0.043096	0.110374	0.001761	0.047040
43	-0.011166	0.080562	-0.011631	0.001391	-0.101350	-0.005410	-0.012848
44	-0.007654	0.008795	-0.009675	-0.010700	0.037999	-0.015346	0.032820
45	0.099492	0.050714	0.031751	0.062839	0.330917	0.022835	0.164849

Secondary (9-12)

CORRELATION MATRIX ALL VARIABLES

	8	9	10	11	12	13	14
1	0.124831	0.126155	-0.097365	0.067782	-0.016539	0.013041	-0.045920
2	-0.137893	-0.200770	0.248544	0.041655	-0.074326	-0.002481	0.057749
3	0.066452	0.103017	-0.015924	-0.020868	0.038746	0.526298	0.008108
4	0.046454	-0.022124	0.085026	0.143792	0.081916	-0.189170	-0.071574
5	0.082433	0.048662	0.046397	0.011909	0.164041	-0.011271	0.801995
6	0.054131	0.085015	0.007612	-0.016502	0.023347	0.557166	0.011854
7	0.517861	0.322880	0.036589	0.124439	0.096286	0.024227	0.166422
8	1.000000	0.557794	-0.030837	0.094552	0.097095	0.049797	0.079245
9	0.557794	1.000000	-0.066030	0.068465	0.069975	0.068783	0.048575
10	-0.030837	-0.066030	1.000000	0.095136	0.060048	-0.006053	0.054274
11	0.094552	0.068465	0.095136	1.000000	0.125511	-0.013618	0.015134
12	0.097095	0.069975	0.060048	0.125511	1.000000	0.042901	0.118783
13	0.049797	0.068783	-0.006053	-0.013618	0.042901	1.000000	0.010447
14	0.079245	0.048575	0.054274	0.015134	0.118783	0.010447	1.000000
15	0.068345	0.031800	0.093384	0.177364	0.258999	0.014860	0.180532
16	-0.020798	-0.043676	0.119222	0.093804	0.024017	-0.006833	0.032073
17	-0.128162	-0.181800	0.311530	0.022054	-0.096259	-0.013515	0.022169
18	-0.111886	-0.154198	0.225271	0.022561	-0.072927	-0.062082	0.005785
19	-0.093006	-0.104079	0.316691	-0.011215	-0.047346	-0.034421	-0.001625
20	-0.028283	-0.012018	0.019709	-0.036500	0.032049	-0.013871	0.115089
21	-0.035411	-0.033787	0.153772	0.020354	-0.042551	-0.005980	-0.044478
22	-0.008004	-0.017878	0.039502	0.003194	0.000434	-0.008426	-0.077644
23	-0.086353	-0.139363	0.453961	0.074678	0.084306	-0.008019	0.135115
24	0.032876	0.021023	0.035727	0.000848	0.022085	-0.006948	0.138733
25	0.029818	0.025443	0.024265	-0.002028	0.017074	0.004624	0.108052
26	-0.078295	-0.114333	0.234477	0.027461	0.007583	-0.056099	0.064809
27	0.047693	0.031625	0.132300	0.001543	0.030097	0.015142	0.066654
28	0.034461	0.026762	-0.055685	0.011539	0.010370	-0.014850	0.037597
29	-0.007204	-0.001824	0.023914	0.000305	0.008432	0.037076	-0.065990
30	0.095475	0.085574	0.082310	0.107420	-0.001331	-0.002524	0.015568
31	0.083250	0.044048	0.084180	0.063362	0.049762	-0.019694	0.127662
32	0.074225	0.068829	0.059095	0.059482	0.051716	0.003844	0.069057
33	0.035200	0.036977	0.047799	-0.008048	-0.014053	0.001069	0.050288
34	0.059888	0.041573	0.021309	-0.011824	0.084230	0.010981	0.599283
35	-0.049509	-0.043405	-0.014958	-0.028297	-0.034873	-0.002718	-0.164941
36	-0.037067	-0.048320	0.034512	-0.003034	-0.006218	-0.009985	-0.164147
37	-0.029055	-0.013083	0.125208	-0.012660	-0.034640	0.008342	-0.049297
38	0.004070	0.005662	0.129040	0.026846	-0.055987	0.031506	-0.121741
39	-0.149611	-0.173258	0.194652	-0.030081	-0.056372	-0.033699	-0.022362
40	0.026577	0.017220	-0.011666	0.044816	0.005916	0.033331	-0.111825
41	0.028005	0.021251	0.066135	0.056329	0.029821	-0.054689	0.076299
42	0.036073	0.059576	-0.021818	0.024821	0.006187	0.013469	0.102922
43	-0.011076	-0.009581	0.069466	0.007331	0.011848	-0.005659	-0.104759
44	0.039268	0.023847	0.028603	0.047840	0.012372	-0.002841	0.037591
45	0.115678	0.107616	0.106004	0.123325	0.090918	0.006372	0.316643

Secondary (9-12)

CORRELATION MATRIX ALL VARIABLES

	15	16	17	18	19	20	21
1	0.040432	-0.095624	0.086909	0.042665	-0.019120	-0.076452	-0.122264
2	0.115293	0.315192	0.815305	0.642247	0.359891	-0.006934	0.073481
3	-0.022510	-0.035842	-0.168306	-0.234252	-0.082500	-0.015458	0.008000
4	0.070021	0.156799	0.030770	0.052124	0.008038	-0.100724	-0.016093
5	0.166789	0.026041	-0.010284	-0.019956	-0.020722	0.136310	-0.049008
6	-0.009855	0.003331	-0.057740	-0.122368	-0.040061	-0.018845	0.008001
7	0.092905	0.046355	-0.006572	-0.004857	-0.032875	-0.023312	-0.036216
8	0.068345	-0.020798	-0.128162	-0.111886	-0.093006	-0.028283	-0.035411
9	0.031800	-0.043676	-0.181800	-0.154198	-0.104079	-0.012018	-0.033787
10	0.093383	0.119222	0.311530	0.225271	0.316691	0.019709	0.153772
11	0.177364	0.093804	0.022054	0.022561	-0.011215	-0.036500	0.020354
12	0.238999	0.024017	-0.096259	-0.072927	-0.047346	0.032049	-0.042551
13	0.014860	-0.006833	-0.013515	-0.062082	-0.034421	-0.013871	-0.005980
14	0.180532	0.032073	0.022169	0.005785	-0.001625	0.115089	-0.044478
15	1.000000	0.095855	0.089467	0.083127	0.036199	0.021582	-0.014591
16	0.095855	1.000000	0.286811	0.216398	0.174103	-0.021685	0.208052
17	0.089467	0.286811	1.000000	0.771790	0.414956	-0.006990	0.076616
18	0.083127	0.216398	0.771790	1.000000	0.351493	-0.019976	0.048873
19	0.036199	0.174103	0.414956	0.351493	1.000000	0.025546	0.114205
20	0.021582	-0.021685	-0.006990	-0.019976	0.025546	1.000000	0.003609
21	-0.014591	0.208052	0.076616	0.048873	0.114205	0.003609	1.000000
22	0.010700	0.097942	0.123829	0.080571	0.058837	-0.002716	0.015094
23	0.142683	0.402901	0.469860	0.394282	0.334236	-0.017678	0.113931
24	0.056229	-0.013758	0.015518	0.017960	0.034198	0.078191	0.015749
25	0.041859	-0.031652	0.006699	0.007757	0.042799	0.066137	0.017336
26	0.076825	0.198911	0.356670	0.375808	0.321241	-0.019903	0.084068
27	0.053327	0.023974	0.085979	0.065928	0.068321	-0.015702	0.019977
28	0.025555	-0.027288	-0.046448	-0.044822	-0.027138	0.023232	-0.065195
29	-0.023633	0.018361	-0.106514	-0.088783	-0.043627	-0.044084	0.036279
30	0.023671	0.020092	-0.063905	-0.085652	-0.017590	-0.026325	0.114883
31	0.047612	0.059112	0.035155	0.030685	0.022822	0.004510	0.037912
32	0.042916	0.025684	-0.063426	-0.045461	-0.000927	0.005232	0.086357
33	0.049510	-0.023248	0.083257	0.059972	0.063884	0.048521	0.023839
34	0.080076	-0.044708	-0.014641	-0.017241	0.001733	0.138781	-0.029210
35	-0.066003	0.031308	-0.029220	0.006343	0.004256	-0.033088	0.026970
36	-0.031545	0.068767	0.010895	0.034822	0.021715	-0.085946	0.014896
37	0.000729	0.083262	0.186330	0.158654	0.172090	0.046503	0.073575
38	0.041615	0.102133	0.219441	0.168811	0.171061	-0.008069	0.084888
39	0.027230	0.213393	0.392734	0.320513	0.240735	0.041327	0.091545
40	0.027847	-0.005109	-0.049122	-0.072285	-0.044632	0.005789	0.021576
41	0.022557	0.010959	-0.050820	-0.045313	-0.028198	0.029056	0.016258
42	0.026889	-0.028439	-0.062866	-0.028663	-0.025124	0.012958	0.041564
43	0.022843	0.059340	0.088999	0.072144	0.081145	0.030051	0.008126
44	0.002843	0.001871	0.030273	0.042975	0.021813	0.025746	0.099151
45	0.121836	0.094869	0.013977	0.001291	0.016234	0.011447	0.018510

Secondary (9-12)

CORRELATION MATRIX ALL VARIABLES

	22	23	24	25	26	27	28
1	-0.001981	-0.189091	-0.013770	-0.023907	-0.066847	0.112375	0.165729
2	0.131300	0.414520	-0.003550	-0.014008	0.311620	0.065091	-0.020128
3	-0.008105	-0.012337	-0.024265	-0.018663	-0.105096	0.020905	-0.012275
4	0.026397	0.223814	-0.028256	-0.047631	0.082585	-0.015338	0.009738
5	-0.093692	0.144572	0.157589	0.122521	0.057897	0.068630	0.040334
6	0.011715	0.034162	-0.021688	-0.012153	-0.072442	0.022061	0.003179
7	-0.016232	0.049909	0.052425	0.033084	0.008420	0.052618	0.040289
8	-0.008004	-0.086353	0.032876	0.029818	-0.078295	0.047693	0.034461
9	-0.017878	-0.139363	0.021023	0.025443	-0.114333	0.031625	0.026762
10	0.039502	0.453960	0.035727	0.024265	0.234477	0.132300	-0.055685
11	0.003194	0.074678	0.000848	-0.002028	0.027461	0.001542	0.011539
12	0.000434	0.084306	0.022084	0.017074	0.007583	0.030097	0.010370
13	-0.008426	-0.008019	-0.006948	0.004624	-0.056098	0.015142	-0.014850
14	-0.077644	0.135115	0.138733	0.108052	0.064809	0.066654	0.037597
15	0.010700	0.142683	0.056229	0.041859	0.076825	0.053327	0.025555
16	0.097942	0.402901	-0.013758	-0.031652	0.198911	0.023974	-0.027288
17	0.123829	0.469860	0.015518	0.006699	0.356670	0.085979	-0.046448
18	0.080571	0.394282	0.017960	0.007757	0.375808	0.065928	-0.044822
19	0.058837	0.334236	0.034198	0.042799	0.321241	0.068321	-0.027138
20	-0.002716	-0.017678	0.078191	0.066137	-0.019903	-0.015702	0.023232
21	0.015094	0.113931	0.015749	0.017336	0.084068	0.019977	-0.065195
22	1.000000	0.073784	-0.037182	-0.039656	0.027084	0.013862	0.011875
23	0.073784	1.000000	0.044032	0.019221	0.457390	0.057872	-0.053563
24	-0.037182	0.044032	1.000000	0.694247	0.035921	0.039175	0.154888
25	-0.039656	0.019221	0.694247	1.000000	0.018423	0.036554	0.104231
26	0.027084	0.457390	0.035921	0.018423	1.000000	0.021799	-0.030630
27	0.013862	0.057872	0.039175	0.036554	0.021799	1.000000	0.022822
28	0.011875	-0.053563	0.154887	0.104231	-0.030630	0.022822	1.000000
29	0.009569	-0.015149	-0.239160	-0.219070	-0.025574	-0.007643	-0.166434
30	-0.047943	-0.063548	0.046301	0.046318	-0.040296	0.011802	0.032676
31	-0.030856	0.094150	0.059654	0.042520	0.043497	0.028351	-0.000686
32	-0.078394	0.000570	0.044746	0.030415	-0.002371	0.071055	-0.055777
33	-0.023348	0.011991	0.482494	0.508076	0.017916	0.062337	0.099057
34	-0.110404	0.030135	0.255977	0.265115	0.028812	0.050825	0.029311
35	0.064523	-0.018346	-0.311950	-0.285828	0.028108	-0.033422	-0.088753
36	0.077882	0.012254	-0.417735	-0.358674	0.030999	-0.014813	-0.178109
37	0.064412	0.075328	0.029851	0.028826	0.118434	0.073140	0.040006
38	0.100128	0.069385	0.057390	0.046099	0.092977	0.108848	0.080747
39	0.089153	0.299920	0.061699	0.047234	0.207580	-0.007583	0.209159
40	0.057170	-0.106685	-0.009928	0.007999	-0.091125	0.040497	0.056046
41	-0.035559	0.069708	0.031433	0.026806	-0.018281	-0.005741	0.025406
42	-0.062871	-0.026068	0.033478	0.005167	-0.011432	0.055206	0.007915
43	0.124755	0.069190	-0.001810	-0.004999	0.037958	0.026992	0.031186
44	-0.069651	0.018451	0.144414	0.142502	0.024581	0.013967	0.032171
45	-0.112292	0.129846	0.057043	0.008190	0.056650	0.119604	0.030762

Secondary (9-12)

CORRELATION MATRIX ALL VARIABLES

	29	30	31	32	33	34	35
1	-0.113896	0.077054	-0.015984	-0.021469	0.011980	-0.042820	-0.058993
2	-0.101288	-0.082339	0.031575	-0.060627	0.057072	-0.007557	-0.038004
3	0.076308	0.014573	-0.009155	0.023448	-0.026144	0.010774	0.016974
4	0.020293	0.071691	0.088820	0.030743	-0.052633	-0.114794	-0.001229
5	-0.051492	0.011022	0.124811	0.081031	0.054903	0.607596	-0.166707
6	0.058402	-0.000424	0.003040	0.008172	-0.011469	0.006129	0.010470
7	-0.024720	0.067933	0.090377	0.072270	0.042956	0.105705	-0.070215
8	-0.007204	0.095475	0.083250	0.074225	0.035200	0.059888	-0.049509
9	-0.001824	0.085574	0.044048	0.068829	0.036977	0.041573	-0.043405
10	0.023914	0.082310	0.084180	0.059095	0.047799	0.021309	-0.014958
11	0.000305	0.107420	0.063362	0.059482	-0.008048	-0.011624	-0.028297
12	0.008432	-0.001331	0.049762	0.051716	-0.014053	0.084230	-0.034873
13	0.037076	-0.002524	-0.019694	0.003844	0.001069	0.010981	-0.002718
14	-0.065990	0.015568	0.127662	0.069057	0.050288	0.599283	-0.164941
15	-0.023633	0.023671	0.047612	0.042916	0.049510	0.080076	-0.066003
16	0.018361	0.020092	0.059112	0.025684	-0.023248	-0.044708	0.031308
17	-0.106514	-0.063905	0.035155	-0.063426	0.083257	-0.014641	-0.029220
18	-0.088783	-0.085652	0.030685	-0.045461	0.059972	-0.017241	0.006343
19	-0.043627	-0.017590	0.022822	-0.000927	0.063884	0.001733	0.004256
20	-0.044084	-0.026325	0.004510	0.005232	0.048521	0.138781	-0.033088
21	0.036279	0.114883	0.037912	0.086357	0.023839	-0.029210	0.026970
22	0.009569	-0.047943	-0.030856	-0.078394	-0.023348	-0.110404	0.064523
23	-0.015149	-0.063548	0.094150	0.000570	0.011991	0.030135	-0.018346
24	-0.239160	0.046301	0.059654	0.044746	0.482494	0.255977	-0.311950
25	-0.219070	0.046318	0.042520	0.030415	0.508076	0.265115	-0.285828
26	-0.025574	-0.040297	0.043497	-0.002371	0.017916	0.028812	0.028108
27	-0.007643	0.011802	0.028351	0.071055	0.062337	0.050825	-0.033422
28	-0.166434	0.032676	-0.000686	-0.055777	0.099057	0.029311	-0.088753
29	1.000000	0.037168	0.013439	0.074523	-0.277836	-0.090426	0.158823
30	0.037168	1.000000	0.156997	0.272522	0.053552	0.020767	-0.040861
31	0.013439	0.156996	1.000000	0.139911	0.054913	0.093171	-0.039937
32	0.074523	0.272522	0.139911	1.000000	0.049192	0.076724	-0.025967
33	-0.277836	0.053552	0.054913	0.049192	1.000000	0.172491	-0.239387
34	-0.090426	0.020767	0.093171	0.076724	0.172491	1.000000	-0.223159
35	0.158823	-0.040861	-0.039937	-0.025967	-0.239387	-0.223159	1.000000
36	0.285905	0.004508	-0.009339	0.016191	-0.348823	-0.237970	0.531888
37	-0.024215	-0.030736	-0.006716	0.000135	0.048027	-0.018789	0.045410
38	-0.040719	-0.006834	-0.012283	0.004563	0.084901	-0.080054	0.014021
39	-0.109576	-0.050679	-0.013788	-0.062656	0.078507	-0.041757	-0.013744
40	-0.010709	0.060316	-0.054844	0.021039	0.043850	-0.067753	0.027261
41	-0.034655	0.069614	0.045047	0.033818	0.021893	0.043609	-0.053168
42	-0.027717	-0.005417	0.015555	0.064444	0.003547	0.095624	-0.047147
43	-0.011624	-0.057503	-0.031418	-0.042548	0.026004	-0.088844	0.080924
44	-0.044406	0.099670	0.071529	0.193385	0.094503	0.087799	-0.067300
45	-0.020737	0.124497	0.132769	0.178514	0.002940	0.224948	-0.096585

Secondary (9-12)

CORRELATION MATRIX ALL VARIABLES

	36	37	38	39	40	41	42
1	-0.028467	-0.052983	0.091626	-0.208472	0.074964	-0.008736	0.019460
2	0.010991	0.146691	0.210590	0.427416	-0.026741	-0.041476	-0.051533
3	0.003783	-0.011670	-0.007714	-0.092313	0.047960	-0.017560	0.025320
4	0.067483	-0.090158	-0.028167	0.052099	-0.018335	0.075183	-0.043096
5	-0.172718	-0.064362	-0.134467	-0.042995	-0.101955	0.092729	0.110374
6	0.010767	0.004369	0.021101	-0.036880	0.044032	-0.032345	0.001761
7	-0.038780	-0.030328	0.000737	-0.075140	-0.010577	0.041199	0.047040
8	-0.037067	-0.029055	0.004070	-0.149611	0.026577	0.028005	0.036073
9	-0.048320	-0.013083	0.005662	-0.173258	0.017220	0.021251	0.059576
10	0.034512	0.125208	0.129040	0.194652	-0.011666	0.066134	-0.021818
11	-0.003034	-0.012660	0.026846	-0.030081	0.044816	0.056329	0.024821
12	-0.006218	-0.034640	-0.055987	-0.056372	0.005916	0.029821	0.006187
13	-0.009985	0.008342	0.031506	-0.033699	0.033331	-0.054689	0.013469
14	-0.164147	-0.049297	-0.121741	-0.022362	-0.111825	0.076299	0.102922
15	-0.031545	0.000729	0.041615	0.027230	0.027847	0.022557	0.026889
16	0.068767	0.083262	0.102133	0.213393	-0.005109	0.010959	-0.028439
17	0.010895	0.186330	0.219441	0.392734	-0.049122	-0.050820	-0.062866
18	0.034822	0.158654	0.168811	0.320513	-0.072285	-0.045313	-0.028663
19	0.021715	0.172090	0.171061	0.240735	-0.044632	-0.028198	-0.025124
20	-0.085946	0.046503	-0.008069	0.041327	0.005789	0.029056	0.012958
21	0.014896	0.073575	0.084888	0.091545	0.021576	0.016258	0.041564
22	0.077882	0.064412	0.100128	0.089153	0.057170	-0.035559	-0.062871
23	0.012254	0.075328	0.069385	0.299921	-0.106685	0.069708	-0.026068
24	-0.417735	0.029851	0.057390	0.061699	-0.009928	0.031433	0.033478
25	-0.358674	0.028826	0.046099	0.047234	0.007999	0.026806	0.005167
26	0.030999	0.118434	0.092977	0.207580	-0.091125	-0.018281	-0.011432
27	-0.014813	0.073140	0.108848	-0.007583	0.040497	-0.005741	0.055266
28	-0.178109	0.040006	0.080747	0.209159	0.056046	0.025406	0.007915
29	0.285905	-0.024215	-0.040719	-0.109576	-0.010709	-0.034655	-0.027717
30	0.004508	-0.030736	-0.006834	-0.050679	0.060316	0.069614	-0.005417
31	-0.009339	-0.006716	-0.012283	-0.013787	-0.054844	0.045047	0.015555
32	0.016191	0.000135	0.004[illegible]63	-0.062656	0.021039	0.033818	0.064444
33	-0.348823	0.048027	0.084901	0.078507	0.043850	0.021893	0.003547
34	-0.237970	-0.018789	-0.080054	-0.041757	-0.067753	0.043609	0.095624
35	0.531888	0.045410	0.014021	-0.013744	0.027261	-0.053168	-0.047147
36	1.000000	0.039147	0.000069	-0.050803	0.051538	-0.052479	-0.079988
37	0.039147	1.000000	0.274508	0.172259	0.043872	-0.039861	0.002534
38	0.000069	0.274508	1.000000	0.173853	0.163521	-0.062948	0.001457
39	-0.050803	0.172259	0.173853	1.000000	0.011417	-0.034070	-0.057156
40	0.051538	0.043872	0.163521	0.011417	1.000000	-0.019377	-0.015869
41	-0.052479	-0.039861	-0.062948	-0.034070	-0.019377	1.000000	0.043379
42	-0.079988	0.002534	0.001457	-0.057156	-0.015869	0.043379	1.000000
43	0.074839	0.135739	0.158676	0.093553	0.196977	-0.024111	-0.055363
44	-0.081549	0.032934	0.029072	0.006728	0.019206	0.016035	0.003270
45	-0.086931	-0.026364	0.003962	-0.046518	-0.035760	0.119201	0.209650

Secondary (9-12)

CORRELATION MATRIX ALL VARIABLES

	43	44	45
1	-0.011166	-0.007654	0.099492
2	0.080562	0.008795	0.050714
3	-0.011631	-0.009675	0.031751
4	0.001391	-0.010700	0.062839
5	-0.101350	0.037999	0.330917
6	-0.005410	-0.015346	0.022835
7	-0.012848	0.032820	0.164849
8	-0.011076	0.039268	0.115678
9	-0.009581	0.023847	0.107616
10	0.069466	0.028603	0.106004
11	0.007331	0.047840	0.123325
12	0.011848	0.012372	0.090918
13	-0.005659	-0.002841	0.006372
14	-0.104759	0.037591	0.316643
15	0.022843	0.002843	0.121836
16	0.059340	0.001871	0.094869
17	0.088999	0.030273	0.013977
18	0.072144	0.042975	0.001291
19	0.081145	0.021813	0.016234
20	0.030051	0.025747	0.011447
21	0.008126	0.099151	0.018510
22	0.124755	-0.069651	-0.112292
23	0.069190	0.018451	0.129846
24	-0.001810	0.144414	0.057044
25	-0.004999	0.142502	0.008189
26	0.037958	0.024581	0.056650
27	0.026992	0.013967	0.119604
28	0.031186	0.032171	0.030762
29	-0.011624	-0.044406	-0.020737
30	-0.057503	0.099670	0.124497
31	-0.031418	0.071529	0.132770
32	-0.042548	0.193385	0.178514
33	0.026004	0.094503	0.002940
34	-0.088844	0.087799	0.224948
35	0.080924	-0.067300	-0.096585
36	0.074839	-0.081549	-0.086931
37	0.135739	0.032934	-0.026364
38	0.158676	0.029072	0.003962
39	0.093553	0.006728	-0.046518
40	0.196977	0.019206	-0.035760
41	-0.024111	0.016035	0.119201
42	-0.055363	0.003270	0.209650
43	1.000000	-0.029771	-0.071660
44	-0.029771	1.000000	0.042036
45	-0.071660	0.042036	1.000000

Secondary (9-12)

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VARIMAX FACTORS

               1            2            3            4            5            6            7

  2     0.850953     0.010450     0.007269    -0.069765    -0.015764     0.076681    -0.045213
  3    -0.173425    -0.029177     0.892181     0.034080     0.009641     0.014996     0.009096
  4    -0.027099    -0.096665    -0.252334     0.114104     0.100740     0.110574    -0.224023
  6    -0.039651    -0.022784     0.913043     0.036270     0.002423     0.027487     0.008456
  7     0.062474     0.038169    -0.005015     0.753549     0.056882    -0.017197    -0.122801
  8    -0.080313     0.026021     0.031484     0.858061     0.061366     0.015687    -0.047602
  9    -0.152611     0.028900     0.070087     0.752528     0.037152     0.003267     0.015595
 10     0.104847    -0.002055     0.023640    -0.015905     0.141117     0.055081    -0.130983
 11     0.085723    -0.030754    -0.021314     0.100346     0.233113     0.130739    -0.496572
 12    -0.214443     0.013101     0.032231     0.047456    -0.085218    -0.032520    -0.655251
 13     0.053064     0.007452     0.777959     0.030482    -0.009002    -0.006880    -0.030922
 15     0.120515     0.062531     0.000473     0.020097     0.000728     0.018829    -0.706212
 17     0.878810     0.032961    -0.031227    -0.056237    -0.009929     0.057857     0.000426
 18     0.815665     0.017768    -0.124892    -0.034720    -0.023176     0.014729    -0.003721
 19     0.331319     0.034335    -0.042289    -0.050107     0.006467     0.032738     0.098871
 21    -0.043323    -0.012909     0.018494    -0.085840     0.356896     0.098931     0.199235
 22     0.112062    -0.038342     0.017715     0.041608    -0.167633     0.496387     0.041029
 23     0.332052     0.012655     0.054653    -0.034384    -0.028228    -0.007629    -0.171679
 24    -0.075528     0.819667    -0.017527     0.006784     0.076242     0.064048     0.013364
 25    -0.081445     0.812667    -0.008235    -0.004130     0.073166     0.099221     0.037216
 26     0.288516     0.005715    -0.079751    -0.025954    -0.046739    -0.057044    -0.010810
 27     0.002068     0.021549    -0.006709     0.068950     0.032338    -0.095906    -0.199819
 28    -0.098276     0.145984    -0.008674     0.038430    -0.018206     0.003145    -0.024805
 29    -0.180161    -0.436407     0.065258    -0.033003     0.107962     0.004361     0.000006
 30    -0.085942    -0.009061     0.000756     0.067702     0.682220     0.032045    -0.006766
 31     0.010432     0.028899    -0.003011     0.126213     0.387356    -0.082131    -0.049374
 32    -0.050919    -0.015331     0.002194     0.030946     0.656337    -0.087684    -0.095674
 33     0.046315     0.721012    -0.007692     0.028652     0.090955     0.134642     0.042529
 35    -0.076696    -0.547864    -0.020054    -0.041161    -0.037268     0.270395     0.161056
 36    -0.015397    -0.672682    -0.026172    -0.022345     0.031107     0.249224     0.056419
 37     0.083516    -0.020625    -0.021718     0.001445    -0.001798     0.179956     0.112654
 38     0.200761     0.028524     0.013627     0.034058     0.079634     0.369162     0.021603
 39     0.378088     0.048014    -0.013645    -0.166485    -0.020637     0.114324     0.087964
 40    -0.017971     0.002792     0.050575    -0.056119     0.157690     0.598146    -0.136663
 43     0.004892     0.004211    -0.025706    -0.004989    -0.116370     0.638329    -0.038787
 44     0.093628     0.163415    -0.010673    -0.013550     0.485618    -0.073261     0.008328
```

Secondary (9-12)

```
VARIMAX FACTORS

                      8              9             10

      2         -0.078809       0.215479      -0.022879
      3         -0.002050       0.015812       0.002168
      4         -0.188742       0.289835       0.466959
      6         -0.022081       0.027249       0.011908
      7         -0.028610       0.050449       0.078739
      8          0.014431      -0.056021      -0.027770
      9          0.037494      -0.102452      -0.101466
     10         -0.002898       0.657342      -0.147885
     11         -0.047650      -0.026436       0.156211
     12          0.025740       0.149862      -0.043101
     13          0.042377      -0.066439      -0.052800
     15          0.027524       0.027581      -0.085866
     17         -0.007170       0.275020      -0.085850
     18          0.045330       0.223751      -0.071790
     19          0.008773       0.497291      -0.223479
     21          0.034780       0.309164      -0.098131
     22          0.002906       0.082860       0.141071
     23         -0.040690       0.724337       0.109768
     24          0.012942       0.120536      -0.008028
     25          0.093330       0.105115      -0.012078
     26          0.012002       0.574193      -0.029034
     27          0.045435       0.097454      -0.543723
     28         -0.820043      -0.069686      -0.071605
     29          0.269652       0.120287      -0.008947
     30         -0.097191      -0.014752       0.098180
     31         -0.032507       0.176946       0.153864
     32          0.126878      -0.000117      -0.110731
     33          0.051020       0.032919      -0.059410
     35          0.125987       0.088088      -0.020838
     36          0.215580       0.098500       0.007525
     37         -0.148847       0.181819      -0.580917
     38         -0.193348       0.050895      -0.477300
     39         -0.530605       0.278292      -0.039984
     40         -0.060398      -0.265598      -0.114623
     43          0.003007       0.088804      -0.115239
     44          0.032188      -0.069222      -0.102579
```

APPENDIX VIII

Index and Selected Variable Intercorrelations for Elementary Teachers (K-8) and (K-6) and for Secondary Teachers (9-12)

In these analyses, the records of all teachers who did not give a response for their sex and/or age were eliminated from all correlations. In addition, the OMITS on variables 30 and 32 were assigned a value of 1 and the OMITS for variable 43 were given a value of 0. Consequently, the estimated number of teachers is about 24,000 less for Elementary (K-8) and 26,202 less for Secondary than in Appendix VII.

ORDER OF VARIABLES

1*	I:	Experience
2	II:	Teaching Conditions
3	III:	Localism
4	IV:	Social-Economic Background
5	V:	Training
6	VI:	College Attendance
7	VII:	Activities
8	VIII:	Preference
9	1**	Sex
10	2	Age
11	5	Race
12	14	% White Undergraduate
13	16	Credits Beyond Highest Degree
14	20	Assignment to Present School
15	21	NSF etc. Summer Institution
16	23	Salary
17	27	Member National Honorary
18	34	% White Teachers Students
19	41	Hours/Day Teaching
20	42	Average Class Size
21	45	Vocabulary Score

*These numbers represent the ordering of the variables on the following sheets.

**These numbers represent the variable numbers from the List of Variables in Appendix VII.

```
TOTAL SAMPLE  Elementary Teachers (K-8)

THE NUMBER OF OBSERVATIONS IS      805722.

VARIABLE        SUMS          SUMS OF SQUARES            MEAN               SIGMA(N)             SIGMA(N-1)
    1       -14392.6582        5229489.1250            -0.0178               2.5460               2.5460
    2       -29363.8132        6651632.0000            -0.0364               2.8712               2.8712
    3       -23730.5029        4067979.0625            -0.0294               2.2454               2.2454
    4       -24384.6865        3134132.0313            -0.0302               1.9708               1.9708
    5       -63685.8643        2529687.8125            -0.0789               1.7690               1.7690
    6       -49034.1133        1684572.7188            -0.0608               1.4438               1.4438
    7       -64547.6641        1243943.3906            -0.0800               1.2392               1.2392
    8      -211276.7109        1328856.6719            -0.2619               1.2564               1.2564
    9         1334.8256         804265.2969             0.0017               0.9985               0.9985
   10        -1463.9653         805948.6641            -0.0018               0.9995               0.9995
   11          270.9905         799073.8516             0.0003               0.9952               0.9952
   12        12516.4237         775376.0547             0.0155               0.9803               0.9803
   13       -20320.5593         800449.5391            -0.0252               0.9958               0.9958
   14       -10821.0442         805424.4219            -0.0134               0.9991               0.9991
   15        -5016.6850         771455.5547            -0.0062               0.9779               0.9779
   16       -13416.1261         821416.1328            -0.0166               1.0089               1.0089
   17        -2378.0966         802133.9766            -0.0029               0.9971               0.9971
   18         9857.0385         794891.9688             0.0122               0.9926               0.9926
   19        28865.2495         732624.5859             0.0358               0.9523               0.9523
   20         1166.6399         805987.5547             0.0014               0.9995               0.9995
   21        13455.5308         775941.3750             0.0167               0.9806               0.9806
```

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EDUCATIONAL MODELS PROJECT
ELEMENTARY(K-8) TEACHER CORRELATION MATRIX

CORRELATION MATRIX      TOTAL SAMPLE

                   1              2              3              4              5              6

   1          1.000000       0.062105      -0.152001      -0.298313       0.325778      -0.163092      0
   2          0.062105       1.000000      -0.004628       0.061391       0.027812       0.030485     -0
   3         -0.152001      -0.004628       1.000000       0.092258       0.013901       0.092431      0
   4         -0.298313       0.061391       0.092258       1.000000       0.000901       0.189402     -0
   5          0.325778       0.027812       0.013901       0.000901       1.000000       0.071188      0
   6         -0.163092       0.030485       0.092431       0.189402       0.071188       1.000000     -0
   7          0.123017      -0.011583       0.032412      -0.045171       0.075334      -0.024456      1
   8         -0.083728       0.099997       0.007032       0.146480       0.037667       0.118433     -0
   9          0.141824       0.068699      -0.036175       0.029451      -0.085862      -0.033412     -0
  10          0.895399       0.063355      -0.087593      -0.269941       0.258291      -0.124222      0
  11         -0.024032       0.217861       0.052675       0.164318       0.006628       0.186562     -0
  12          0.019948       0.192537       0.047378       0.126358       0.013738       0.158296     -0
  13          0.202389      -0.046788       0.063129       0.022067       0.276337       0.074854      0
  14          0.086007       0.047881      -0.032562      -0.069321      -0.026543       0.012733     -0
  15          0.034381      -0.035303      -0.008867      -0.025388       0.053803      -0.002832      0
  16          0.309557       0.018142       0.076158       0.018417       0.793479       0.080303      0
  17          0.028553       0.034533       0.043292       0.048785       0.086872       0.054698      0
  18         -0.005124       0.380442       0.039148       0.094821      -0.035056       0.096613     -0
  19         -0.080352      -0.011928      -0.005313       0.081592       0.069652       0.041827     -0
  20         -0.120602       0.056372       0.031417       0.085611       0.010195       0.057247     -0
  21         -0.072757       0.093216       0.060565       0.203132       0.122257       0.186876     -0


                   8              9             10             11             12             13

   1         -0.083728       0.141824       0.895399      -0.024032       0.019948       0.202389      0
   2          0.099997       0.068699       0.063355       0.217861       0.192537      -0.046788      0
   3          0.007032      -0.036175      -0.087593       0.052675       0.047378       0.063129     -0
   4          0.146480       0.029451      -0.269941       0.164318       0.126358       0.022067     -0
   5          0.037667      -0.085862       0.258291       0.006628       0.013738       0.276337     -0
   6          0.118433      -0.033412      -0.124222       0.186562       0.158296       0.074854      0
   7         -0.097965      -0.004528       0.095410      -0.179395      -0.175516       0.108293     -0
   8          1.000000      -0.021952      -0.076138       0.162982       0.153843      -0.012770      0
   9         -0.021952       1.000000       0.172750      -0.002852      -0.007154      -0.107346     -0
  10         -0.076138       0.172750       1.000000       0.043951       0.085232       0.207016      0
  11          0.162982      -0.002852       0.043951       1.000000       0.807625      -0.017329      0
  12          0.153843      -0.007154       0.085232       0.807625       1.000000      -0.009723      0
  13         -0.012770      -0.107346       0.207016      -0.017329      -0.009723       1.000000      0
  14          0.005332      -0.034471       0.097097       0.117289       0.112758       0.010490      1
  15         -0.017032      -0.066789       0.019038      -0.080985      -0.072596       0.097383      0
  16          0.026097      -0.091198       0.268635       0.077667       0.083396       0.343960     -0
  17          0.059835       0.017465       0.022612       0.042024       0.045620       0.037086      0
  18          0.159329       0.003019       0.039187       0.636892       0.600543      -0.072696      0
  19          0.022633      -0.022560      -0.067397       0.083720       0.065065       0.050572     -0
  20          0.066580       0.026255      -0.116405       0.141028       0.117096      -0.030516     -0
  21          0.157742       0.025898      -0.011217       0.396680       0.362584       0.051661      0
```

EDUCATIONAL MODELS PROJECT
ELEMENTARY(K-8) TEACHER CORRELATION MATRIX

CORRELATION MATRIX TOTAL SAMPLE

	15	16	17	18	19	20	21
1	0.034381	0.309557	0.028553	-0.005124	-0.080352	-0.120602	-0.072757
2	-0.035303	0.018142	0.034533	0.380442	-0.011928	0.056372	0.093216
3	-0.008867	0.076158	0.043292	0.039148	-0.005313	0.031417	0.060565
4	-0.025388	0.018417	0.048785	0.094821	0.081592	0.085611	0.203132
5	0.053803	0.793479	0.086872	-0.035056	0.069652	0.010195	0.122257
6	-0.002832	0.080303	0.054698	0.096613	0.041827	0.057247	0.186876
7	0.091958	0.024518	0.079543	-0.125266	-0.101015	-0.027536	-0.126037
8	-0.017032	0.026097	0.059835	0.159329	0.022633	0.066580	0.157742
9	-0.066789	-0.091198	0.017465	0.003019	-0.022560	0.026255	0.025898
10	0.019038	0.268635	0.022612	0.039187	-0.067397	-0.116405	-0.011217
11	-0.080985	0.077667	0.042024	0.636892	0.083720	0.141028	0.396680
12	-0.072596	0.083396	0.045620	0.600543	0.065065	0.117096	0.362584
13	0.097383	0.343960	0.037086	-0.072696	0.050572	-0.030516	0.051661
14	0.004067	-0.041936	0.009621	0.090936	-0.037628	-0.022078	0.022072
15	1.000000	0.027240	0.016262	-0.070765	-0.009995	-0.031275	-0.049425
16	0.027240	1.000000	0.039781	-0.020763	0.138552	0.024498	0.165209
17	0.016262	0.039781	1.000000	0.041253	-0.018704	0.004816	0.083071
18	-0.070765	-0.020763	0.041253	1.000000	0.012659	0.108175	0.276237
19	-0.009995	0.138552	-0.018704	0.012659	1.000000	0.030921	0.102979
20	-0.031275	0.024498	0.004816	0.108175	0.030921	1.000000	0.205260
21	-0.049425	0.165209	0.083071	0.276237	0.102979	0.205260	1.000000

```
EDUCATIONAL MODELS PROJECT
ELEMENTARY(K-6) TEACHER CORRELATION MATRIX

TOTAL SAMPLE


THE NUMBER OF OBSERVATIONS IS     698120.

VARIABLE        SUMS          SUMS OF SQUARES            MEAN            SIGMA(N)          SIGMA(N-1)
    1       396354.7773        5561143.1250             0.5677            2.7647             2.7647
    2       279776.6406        5771425.6250             0.4008            2.8472             2.8472
    3      -166242.4746        3635836.0313            -0.2381            2.2697             2.2697
    4      -197953.9805        2765149.9688            -0.2836            1.9699             1.9699
    5      -398223.4336        2296879.1875            -0.5704            1.7218             1.7218
    6      -580427.2500        2909760.7500            -0.8314            1.8646             1.8646
    7       -99944.2930        1012057.3594            -0.1432            1.1955             1.1955
    8      -287003.3086        1084706.5625            -0.4111            1.1768             1.1768
    9       569183.4141         783713.9516             0.8153            0.6767             0.6767
   10       221259.8613         941424.6250             0.3169            1.1172             1.1172
   11       101343.0742        1051326.8594             0.1452            1.2186             1.2186
   12       -54584.0581         830799.4375            -0.0782            1.0881             1.0881
   13      -177973.7031         597217.2266            -0.2549            0.8891             0.8891
   14      -294205.2891         880900.9609            -0.4214            1.0413             1.0413
   15      -180092.5098         192998.5391            -0.2580            0.4582             0.4582
   16      -176313.9473         630785.1406            -0.2526            0.9164             0.9164
   17      -123358.0072         531205.5469            -0.1767            0.8542             0.8542
   18       -43584.1563         839095.3906            -0.0624            1.0945             1.0946
   19      -919811.4844        1269952.5313            -1.3176            0.2884             0.2884
   20        41656.9839         676654.0781             0.0597            0.9827             0.9827
   21      -121105.5602         847747.2266            -0.1735            1.0882             1.0882
```

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EDUCATIONAL MODELS PROJECT
ELEMENTARY(K-6) TEACHER CORRELATION MATRIX

CORRELATION MATRIX      TOTAL SAMPLE

                   1              2              3              4              5              6              7

  1         1.000000       0.056317      -0.156415      -0.302201       0.296063      -0.167596       0.106156
  2         0.056317       1.000000      -0.003340       0.061304       0.026545       0.032060      -0.020998
  3        -0.156415      -0.003340       1.000000       0.098538       0.016806       0.100454       0.035582
  4        -0.302201       0.061304       0.098538       1.000000       0.009904       0.186227      -0.035184
  5         0.296063       0.026545       0.016806       0.009904       1.000000       0.079102       0.070791
  6        -0.167596       0.032060       0.100454       0.186227       0.079102       1.000000      -0.015323
  7         0.106156      -0.020998       0.035582      -0.035184       0.070791      -0.015323       1.000000
  8        -0.068931       0.119305       0.002219       0.141517       0.049307       0.117347      -0.094341
  9         0.118343       0.053697      -0.035670       0.022875      -0.093790      -0.029676      -0.014684
 10         0.898800       0.059404      -0.092795      -0.272851       0.230180      -0.128022       0.076593
 11        -0.021004       0.222989       0.051670       0.165830       0.002900       0.190794      -0.177404
 12         0.024217       0.198928       0.045961       0.126316       0.008727       0.161959      -0.175252
 13         0.206663      -0.043994       0.067275       0.024234       0.271921       0.071559       0.109271
 14         0.107275       0.052214      -0.039968      -0.073704      -0.015505       0.015454      -0.017643
 15         0.041244      -0.033471      -0.019670      -0.024341       0.041251      -0.002796       0.088483
 16         0.239674       0.017949       0.074872       0.020405       0.774841       0.080072       0.019145
 17         0.032981       0.040376       0.039402       0.045940       0.088063       0.059692       0.081550
 18        -0.001066       0.388325       0.036042       0.095388      -0.041094       0.099052      -0.128968
 19        -0.080513      -0.015967      -0.001362       0.074263       0.071776       0.035866      -0.102030
 20        -0.137720       0.053052       0.029101       0.090460       0.001739       0.058386      -0.020214
 21        -0.077382       0.100150       0.065242       0.202269       0.129330       0.186860      -0.124110


                   8              9             10             11             12             13             14

  1        -0.068931       0.118343       0.898800      -0.021004       0.024217       0.206663       0.107275
  2         0.119305       0.053697       0.059404       0.222989       0.198928      -0.043994       0.052214
  3         0.002219      -0.035670      -0.092795       0.051670       0.045961       0.067275      -0.039968
  4         0.141517       0.022875      -0.272851       0.165830       0.126316       0.024234      -0.073704
  5         0.049307      -0.093790       0.230180       0.002900       0.008727       0.271921      -0.015505
  6         0.117347      -0.029676      -0.128022       0.190794       0.161959       0.071559       0.015454
  7        -0.094341      -0.014684       0.076593      -0.177404      -0.175252       0.109271      -0.017643
  8         1.000000      -0.002119      -0.061350       0.173840       0.166115      -0.013182       0.005480
  9        -0.002119       1.000000       0.141150       0.002862      -0.004998      -0.093739      -0.020961
 10        -0.061350       0.141150       1.000000       0.048657       0.091944       0.211535       0.116868
 11         0.173840       0.002862       0.048657       1.000000       0.804467      -0.019080       0.114820
 12         0.166115      -0.004998       0.091944       0.804467       1.000000      -0.012995       0.115956
 13        -0.013182      -0.093739       0.211535      -0.019080      -0.012995       1.000000       0.014395
 14         0.005480      -0.020961       0.116868       0.114820       0.115956       0.014395       1.000000
 15        -0.026193      -0.052274       0.028215      -0.081384      -0.071657       0.089486      -0.004846
 16         0.031285      -0.101036       0.262225       0.078044       0.085034       0.341066      -0.030349
 17         0.056072       0.010933       0.025568       0.039560       0.039740       0.035603       0.012276
 18         0.170419       0.009026       0.044540       0.342701       0.502179      -0.081366       0.091100
 19         0.014099      -0.018510      -0.066957       0.094571       0.074694       0.052490      -0.036159
 20         0.075281       0.036841      -0.136143       0.144307       0.115440      -0.045101      -0.029110
 21         0.164299       0.023617      -0.016086       0.409090       0.369702       0.048787       0.017764
```

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EDUCATIONAL MODELS PROJECT
ELEMENTARY(K-6 ) TEACHER CORRELATION MATRIX

CORRELATION MATRIX      TOTAL SAMPLE

               15            16            17            18            19            20            21

  1        0.041244      0.299874      0.032951     -0.001066     -0.080513     -0.137720     -0.07736
  2       -0.033471      0.317949      0.040376      0.388325     -0.015967      0.063052      0.1001
  3       -0.019870      0.074872      0.039402      0.036042     -0.001362      0.029161      0.066242
  4       -0.024341      0.020405      0.045940      0.095388      0.074263      0.090460      0.20225
  5        0.041251      0.774841      0.088063     -0.041094      0.071775      0.001759      0.1295
  6       -0.002796      0.080072      0.059692      0.099052      0.035866      0.058366      0.1368
  7        0.088483      0.019145      0.081550     -0.123983     -0.102056     -0.020214     -0.13411
  8       -0.026193      0.031265      0.056072      0.170419      0.014099      0.075281      0.16429
  9       -0.052274     -0.101006      0.010933      0.009026     -0.018510      0.035641      0.027617
 10        0.028216      0.262225      0.025568      0.044540     -0.066957     -0.136143     -0.01605
 11       -0.081384      0.078044      0.039560      0.642701      0.094571      0.144367      0.40909
 12       -0.073557      0.085034      0.039740      0.602179      0.074694      0.115440      0.36970
 13        0.089486      0.341086      0.035603     -0.081386      0.052490     -0.046131      0.048767
 14       -0.004848     -0.030399      0.012276      0.091100     -0.038158     -0.029110      0.01770
 15        1.000000      0.018817      0.015700     -0.073810     -0.022459     -0.037300     -0.064089
 16        0.018817      1.000000      0.037544     -0.024921      0.152921      0.012102      0.169786
 17        0.015700      0.037544      1.000000      0.039628     -0.031226      0.004463      0.077332
 18       -0.073810     -0.024921      0.039628      1.000000      0.020060      0.115039      0.287118
 19       -0.022459      0.152921     -0.031226      0.020060      1.000000      0.034289      0.107472
 20       -0.037300      0.012102      0.004463      0.115039      0.034289      1.000000      0.213769
 21       -0.064089      0.169786      0.077332      0.287118      0.107472      0.213769      1.000000
```

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EDUCATIONAL MODELS PROJECT
SECONDARY(9-12) TEACHER CORRELATION MATRIX

TOTAL SAMPLE


THE NUMBER OF OBSERVATIONS IS     530476.

VARIABLE        SUMS         SUMS OF SQUARES          MEAN            SIGMA(N)        SIGMA(N-1)
     1      -112291.6797      3290091.1250           -0.2117            2.4814            2.4814
     2        19396.7056      4306250.8125            0.0366            2.8489            2.8489
     3       -36407.3101      2448242.4063           -0.0686            2.1472            2.1472
     4       -55320.0952      1890347.3438           -0.1043            1.8848            1.8848
     5      -141883.5313      1801818.5469           -0.2675            1.8235            1.8235
     6      -172812.0176      1813673.3594           -0.3258            1.8201            1.8201
     7        -6117.1052       851640.0781           -0.0115            1.2670            1.2670
     8       -75862.0225       856938.4688           -0.1430            1.2629            1.2629
     9         -289.3667       530415.0469           -0.0005            0.9999            0.9999
    10       -34459.6880       524296.9219           -0.0650            0.9920            0.9920
    11       162086.6445       648230.8672            0.3055            1.0624            1.0624
    12        27412.8892       463565.8438            0.0517            0.9334            0.9334
    13       -20815.5100       524059.0039           -0.0392            0.9932            0.9932
    14        21117.1511       517283.2891            0.0398            0.9867            0.9867
    15       -20413.6284       468096.4336           -0.0385            0.9386            0.9386
    16       -74393.6201       524351.7422           -0.1402            0.9843            0.9843
    17        -6597.3905       521498.6211           -0.0124            0.9914            0.9914
    18        54221.4268       492033.2500            0.1022            0.9576            0.9576
    19      -642514.0703       826382.1484           -1.2112            0.3013            0.3013
    20       -37135.8164       549504.3594           -0.0700            1.0154            1.0154
    21        -1705.9067       507424.2617           -0.0032            0.9780            0.9780
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EDUCATIONAL MODELS PROJECT
SECONDARY(9-12) TEACHER CORRELATION MATRIX

CORRELATION MATRIX      TOTAL SAMPLE

                   1             2             3             4             5             6             7

   1        1.000000      0.021881     -0.092238     -0.178921      0.548238     -0.033077      0.154354
   2        0.021881      1.000000     -0.012301      0.072652      0.001622      0.055572      0.008099
   3       -0.092238     -0.012301      1.000000      0.076231     -0.037060      0.047550      0.026229
   4       -0.178921      0.072652      0.076231      1.000000     -0.072658      0.135817     -0.023145
   5        0.548238      0.001622     -0.037060     -0.072658      1.000000      0.079297      0.091506
   6       -0.033077      0.055572      0.047550      0.135817      0.079297      1.000000      0.009131
   7        0.154354      0.008099      0.026229     -0.023145      0.091506      0.009131      1.000000
   8       -0.085152      0.091413      0.008261      0.160245      0.019016      0.090205     -0.049366
   9        0.034203      0.048233     -0.000403      0.145398     -0.135759      0.014298      0.025537
  10        0.895466     -0.005798     -0.041182     -0.156604      0.451033     -0.019465      0.132826
  11       -0.028469      0.172890      0.023356      0.122674      0.068384      0.186954     -0.152000
  12        0.011209      0.158423      0.025486      0.104917      0.075268      0.151309     -0.165830
  13        0.306273     -0.054534      0.020920      0.003897      0.317760      0.077385      0.068397
  14        0.003663      0.064562     -0.020811     -0.048517     -0.003220      0.018777      0.032318
  15        0.092561      0.001967      0.018760     -0.042550      0.174682     -0.008147      0.065594
  16        0.485434     -0.000314      0.003496     -0.029785      0.808310      0.113969      0.028030
  17        0.037748      0.041611      0.040318      0.058862      0.081046      0.050750      0.086342
  18       -0.051296      0.269799      0.039577      0.070462     -0.013973      0.105055     -0.113499
  19       -0.078941      0.025891      0.001723      0.046753     -0.024886      0.029140     -0.025833
  20       -0.044826      0.034219      0.005017      0.062826     -0.001569     -0.005146     -0.029601
  21        0.005369      0.066332      0.035880      0.177924      0.096806      0.154458     -0.051384


                   8             9            10            11            12            13            14

   1       -0.085152      0.034203      0.895466     -0.028469      0.011209      0.306273      0.003663
   2        0.091413      0.048233     -0.005798      0.172890      0.158423     -0.054534      0.064562
   3        0.008261     -0.000403     -0.041182      0.023356      0.025486      0.020920     -0.020811
   4        0.160245      0.145398     -0.156604      0.122674      0.104917      0.003897     -0.048517
   5        0.019016     -0.135759      0.451033      0.068384      0.075268      0.317760     -0.003220
   6        0.090205      0.014298     -0.019465      0.186954      0.151309      0.077385      0.018777
   7       -0.049366      0.025537      0.132826     -0.152000     -0.165830      0.068397      0.032318
   8        1.000000      0.006110     -0.074887      0.124204      0.104654      0.041991     -0.015064
   9        0.006110      1.000000      0.093442     -0.057664     -0.047563     -0.084479     -0.073658
  10       -0.074887      0.093442      1.000000      0.004573      0.046459      0.312455     -0.006367
  11        0.124204     -0.057664      0.004573      1.000000      0.771446      0.021994      0.130378
  12        0.104654     -0.047563      0.046459      0.771446      1.000000      0.030572      0.109150
  13        0.041991     -0.084479      0.312455      0.021994      0.030572      1.000000     -0.033284
  14       -0.015064     -0.073658     -0.006367      0.130378      0.109150     -0.033284      1.000000
  15        0.122287     -0.119171      0.074314     -0.063025     -0.059616      0.218497     -0.016838
  16       -0.002913     -0.172317      0.413598      0.127910      0.125916      0.386937     -0.031961
  17        0.086256      0.121097      0.039479      0.061576      0.053051      0.016590     -0.041845
  18        0.104622     -0.048211     -0.033326      0.597894      0.593986     -0.063186      0.140193
  19        0.061799      0.037793     -0.060689      0.042002      0.010016     -0.019571     -0.021256
  20        0.068825      0.024198     -0.033883      0.096102      0.088788     -0.003968      0.000106
  21        0.220999      0.119233      0.042099      0.309069      0.290714      0.132361     -0.007404
```

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EDUCATIONAL MODELS PROJECT
SECONDARY(9-12) TEACHER CORRELATION MATRIX

CORRELATION MATRIX      TOTAL SAMPLE

                 15            16            17            18            19            20            21

  1        0.092561      0.485434      0.037748     -0.051296     -0.078941     -0.044826      0.005369
  2        0.001967     -0.000314      0.041611      0.269799      0.025891      0.034219      0.066332
  3        0.018760      0.003496      0.040318      0.039577      0.001723      0.005017      0.035880
  4       -0.042550     -0.029785      0.058862      0.070462      0.046753      0.062826      0.177924
  5        0.174682      0.808310      0.081046     -0.013973     -0.024886     -0.001569      0.096806
  6       -0.008147      0.113969      0.050750      0.105055      0.029140     -0.005146      0.154458
  7        0.065594      0.028030      0.086342     -0.113499     -0.025833     -0.029601     -0.051384
  8        0.122287     -0.002913      0.086256      0.104622      0.061799      0.068825      0.220999
  9       -0.119171     -0.172317      0.121097     -0.048211      0.037793      0.024198      0.119233
 10        0.074314      0.413598      0.039479     -0.033326     -0.060689     -0.033883      0.042099
 11       -0.063025      0.127910      0.061576      0.597894      0.042002      0.096102      0.309069
 12       -0.059616      0.125916      0.053051      0.593986      0.010016      0.088788      0.290714
 13        0.218497      0.386937      0.016590     -0.063186     -0.019571     -0.003968      0.132361
 14       -0.016838     -0.031961     -0.041845      0.140193     -0.021256      0.000106     -0.007404
 15        1.000000      0.122689      0.034853     -0.055963      0.027841      0.044299      0.024540
 16        0.122689      1.000000      0.041778     -0.001819     -0.022924     -0.001690      0.119839
 17        0.034853      0.041778      1.000000      0.031894      0.016821      0.057573      0.118126
 18       -0.055963     -0.001819      0.031894      1.000000      0.011071      0.067352      0.195541
 19        0.027841     -0.022924      0.016821      0.011071      1.000000      0.042926      0.069789
 20        0.044299     -0.001690      0.057573      0.067352      0.042926      1.000000      0.196292
 21        0.024540      0.119839      0.118126      0.195541      0.069789      0.196292      1.000000
```

APPENDIX IX

Principal Questionnaire Item Codes*

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*On the following pages the same code values were used for Elementary (E) and Secondary (S) unless indicated otherwise by separate code values. NR indicates the value given when the principal failed to respond to a particular question. Questionnaires are available upon request from the author.

Set of 22 Variables

Variable No. In Matrix	Questionnaire Item Number	Title	Manner of Coding
1	9	Acreage of Plant Site	A high value indicates more acreage
2	10	Age of Building	A high value indicates an older building
3	11	Pupils Per Room	A high value indicates many pupils per room
4	13a	Centralized Library	A high value indicates that the school has a central library room

Variable No. In Matrix	Questionnaire Item Number	Title	Manner of Coding
5	13c-i	Auditorium	A high value indicates that the school has one
6	13c-i	Gymnasium	A high value indicates that the school has one
7	13c-i	Cafeteria	A high value indicates that the school has one
8	13p	Athletic Field	A high value indicates that the school has one
9	13r	Hot Meal Kitchen	A high value indicates that the school has one
10	25	Infirmary or Health Room	A high value indicates that the school has one
11	56	Years as a Principal	A high value indicates many years
12	57	Years as a Principal in this School	A high value indicates many years
13	58	Age	A high value indicates older age
14	59	Sex	A high value indicates female
15	60	Highest Degree Held	A high value indicates a higher degree
16	62	Undergraduate Institution Attended	The item response categories were ranked by the magnitude of the teachers verbal score assigning a high rank to a high verbal score. Each respondent was assigned the rank for the item response h chose. A high score indicates a high rank
17	63	Highest Degree Offered by Undergraduate Institution	Same as variable 16

Variable No. In Matrix	Questionnaire Item Number	Title	Manner of Coding
18	64	Area of Undergraduate Institution	High value indicates institution is located in another area or State
19	66	Credit Beyond Highest Degree	High value indicates many credits beyond highest degree
20	69	Principal's Estimate of School's Reputation	A high value indicates that the principal feels the school has a good reputation among other educators in the area
21	70	Percent of Time Teaching	A high value indicates that the principal spends a large percentage of his time teaching
22	71	Principal's Salary	A high value indicates a high annual salary.

Set of 62 Variables

Variable No. In Matrix	Questionnaire Item Number	Title	Manner of Coding
1	3	Free Kindergarten (Elementary)	A high value indicates that the school has one
1	53, 54	College Representatives (Secondary)	A high value indicates that many colleges sent representatives to talk with the high school students the previous year
2	4	Free Nursery (Elementary)	A high value indicates that the school has one
2	71	Principal's Salary (Secondary)	A high value indicates a high annual salary
3	5	State Accreditation	A high value indicates accreditation
4	6	Regional Accreditation	A high value indicates accreditation
5	7	Compulsory Attendance Law	A high value indicates that there is a compulsory school attendance law enforced
6	72	Rural-Urban Location	A high score indicates an inner city or large city suburb location
7	73	Principal's Estimate of Student's Socio-Economic Status	A high value indicates children of professional and white collar workers, low value indicates children of blue collar and rural families
8	74	Public Library	A high value indicates that there is a public library of at least 5,000 books within walking distance of the school
9	75	PTA Attendance	A high value indicates that a large proportion of student's parents attend PTA meetings.

Variable No. In Matrix	Questionnaire Item Number	Title	Manner of Coding
10	76	Length of School Day	A high score indicates a longer school day (maximum is 8 hours or more)
11	77	Courses from Different Teachers	A high score indicates a higher grade at which different courses are taken from different teachers
12	13b	Volumes in Library	A high score indicates many volumes in the school library
13	80	Grouping	A high score indicates that the school practices ability grouping for all students
14	82	Percent Highest Track	A high score indicates a high percent of students in the highest track
15	83	Percent Lowest Track	A high score indicates a high percent of students in the lowest track
16	13j	Shop Tools	A high score indicates that the school has a shop with power tools
17	13k	Biology Lab	A high score indicates that the school has a biology lab
18	13l	Chemistry Lab	A high score indicates that the school has a chemistry lab
19	13m	Physics Lab	A high score indicates that the school has a physics lab
20	13n	Language Lab	A high score indicates that the school has a foreign language laboratory with sound equipment
21	13o	Typing Room	A high score indicates that the school has a room used only for typing instruction

Variable No. In Matrix	Questionnaire Item Number	Title	Manner of Coding
22	84	Percent to Higher Track	A high value indicates that a high percent of students moved to a higher track
23	13q	Movie Projectors	A high value indicates that the school has three or more movie projectors with sound equipment
24	85	Percent to Lower Track	A high value indicates that a high percent of students moved to a lower track
25	14	Percent Free Lunch	A high value indicates a high percent of students who receive free lunch daily
26	15	Percent Free Milk	A high value indicates a high percent of students who receive free milk daily
27	16	Texts Provided	A high value indicates that students must buy their own books, low value that they are provided free
28	17	Age of Texts	A high value indicates older texts provided
29	18	Third Grade Reader (Elementary)	A high value indicates an older 3rd grade reader
29	19	Biology Text (Secondary)	A high value indicates an older biology text
30	20	Availability of Texts	A high value indicates that texts are available in sufficient numbers
31	21	Percent of Students In Part-Time Attendance	A high value indicates a high percent of students in part-time attendance

Variable No. In Matrix	Questionnaire Item Number	Title	Manner Of Coding
32	22	Intelligence Testing	A high value indicates that the school gives intelligence tests in 3 or more grades
33	23	Achievement Testing	A high value indicates that the school gives standardized achievement tests at several grades
34	24	Interest Testing	A high value indicates that the school gives interest inventories at 3 or more grades
35	86	Accelerated Curriculum	A high value indicates that the school provides an accelerated curriculum in all academic subjects
36	26	Pupils Per Teacher	A high value indicates many pupils per teacher
37	27	Teacher Turnover	A high value indicates a high percent of teachers left in the previous year for reasons other than death or retirement
38	28	Teacher Tenure	A high value indicates an automatic tenure system after a fixed time period
39	29	Teacher Exams	A high value indicates teacher exams are used in the appointment process
40	30	Art Teacher	A high value indicates that the school has an art teacher 4 or more days per week
41	31	Music Teacher	A high value indicates that the school has a music teacher 4 or more days per week

Variable No. In Matrix	Questionnaire Item Number	Title	Manner of Coding
42	32	Speech Teacher	A high value indicates that the school has a speech correction teacher 4 or more days per week
43	33	Mental Health	A high value indicates that the school has provisions for handling mental health problems
44	34	Reading Teachers	A high value indicates 4 or more full-time reading teachers
45	35	Guidance Counselors	A high value indicates 5 or more full-time guidance counselors
46	36	Librarian	A high value indicates one or more full-time librarians
47	37	Nurse	A high value indicates that the school has a full-time nurse
48	38	Attendance Officer	A high value indicates that the school has a full-time school attendance officer
49	39	Pupil Assignment	A high value indicates that all pupils in a particular geographic area attend the school with few or no transfers, low value indicates some other assignment policy
50	40	Enrollment	A high value indicates a large number of students enrolled in the school
51	42	Daily Attendance	A high value indicates a high average daily percentage of attendance
52	43	Percent White	A high value indicates a high percentage of white students in the student body

Variable No. In Matrix	Questionnaire Item Number	Title	Manner of Coding
53	44	Student Transfers In	A high value indicates a high percentage of students who transfer in from another school
54	45	Student Transfers Out	A high value indicates a high percentage of students who transfer out to another school
55	48a-g	Principal's Estimate of School Problems	A high value indicates many school problems such as destruction of property, stealing, racial tension, physical violence against teachers, drinking, etc.
56	87	Non-Whites Entered	A high value indicates 5 to 10 years or more since non-whites first entered the school, low value indicates school is entirely non-white
57	89	Promotion Policy	A high value indicates that a pupil is promoted with his age group regardless of the quality of his work, low value that student must repeat failed courses or grades
58	90	Extra-Curricular Activities	A high value indicates a large number of extracurricular activities offered by the school
59	91	Homework	A high value indicates 3 or 4 hours or more of homework is expected per day from the students
60	92	Remedial Math	A high value indicates a high percent of students taking courses or special class work in remedial arithmetic or math

Variable No. In Matrix	Questionnaire Item Number	Title	Manner of Coding
61	93	Remedial Reading	A high value indicates a high percent of students taking courses or special class work in remedial reading or English
62	94	Special Classes	A high value indicates that the school provides many special classes for the mentally retarded, behavior problems, rapid learners, Non-English speaking students, physically handicapped, etc.

The codes for Elementary and Secondary schools are given in Appendix IX. The means, standard deviations and intercorrelations for Elementary, Secondary and Total schools using these codes are given in Appendix X.

Coding of Items From the Principal Questionnaire for Elementary (K-8) and Secondary (9-12) Principals

Set of 22 Variables

Variable Number	Question Item No.		A	B	C	D	E	F	G	H	I	J	K	NR
1	9	Elem. & Sec.	0.5	1	2	3	4	5	6	7	8	9		7
2	10	Elementary	0.5	2.5	7.0	14.5	24.5	34.5	44.5					44.5
		Secondary	0.5	2.5	7.0	14.5	24.5	34.5	44.5					0.5
3	11		Use gridded value and divide the responses to question 40 by this to obtain pupils per room											
		Elementary												8
		Secondary												25
4	13a	Elem. & Sec.	1	0										0
5	13c,f, g,or i	Elem. & Sec.	Score 1 if c, f, g, or i is a YES response, 0 otherwise											
6	13e,f, h,or i	Elem. & Sec.	Score 1 if e, f, h, or i is a YES response, 0 otherwise											
7	13d,g, h,or i	Elem. & Sec.	Score 1 if d, g, h, or i is a YES response, 0 otherwise											
8	13p	Elem. & Sec.	1	0	0	0								0
9	13n	Elem. & Sec.	1	0	0									0
10	25	Elem. & Sec.	1	0										0

Continued

Variable Number	Question Item No.		A	B	C	D	E	F	G	H	I	J	K	NR
11	56	Elementary	0.0	1.5	3.5	7.0	12.0	17.0	24.5	34.5				1.5
		Secondary	0.0	1.5	3.5	7.0	12.0	17.0	24.5	34.5				0.0
12	57	Elementary	0.0	1.5	3.5	7.0	12.0	17.0	24.5	34.5				0.0
	s	Secondary	0.0	1.5	3.5	7.0	12.0	17.0	24.5	34.5				1.5
13	58	Elem. & Sec.	24	30	40	50	60	68						
14	59	Elem. & Sec.	0	1										Omit
15	60	Elementary	1	2	3	4	5	6						3
		Secondary	1	2	3	4	5	6						2
16	62	Elementary	2	7	5	4	6	1	3					0
		Secondary	2	1	3	2	4							1
17	63	Elementary	2	1	3	2	4							1
		Secondary	1	2	3	3	4							1
18	64	Elem. & Sec.	1	2	3	0	0	0	0					0
19	66	Elem. & Sec.	0	5	15	25	35							0
20	69	Elementary	4	3	2	1	0	1						1
		Secondary	4	3	2	1	0	3						2
21	70	Elem. & Sec.	0	12	37	62	87							25
22	71	Elementary	3.5	4.5	5.5	6.5	7.5	8.5	9.5	12.5	17.5	22.5		6.0
		Secondary	3.4	4.5	5.5	6.5	7.5	8.5	9.5	12.5	17.5	22.5		6.5

Coding of Items From the Principal Questionnaire for Elementary (K-8) and Secondary (9-12) Principals

Set of 62 Variables

Variable Number	Question Item No.		A	B	C	D	E	F	G	H	I	J	K	L	NR
1	3	Elementary	5	1	3	2	4								5
1			If the response to questionnaire Item 43 is 45 or less, enter the score from Item 53. If the response is 50 or more on Item 43, enter the score from Item 54. Score the alternatives for Items 53 and 54 as follows:												
	53	Elem. & Sec.	0	1	4	7	15	30							0
	54	Elem. & Sec.	0	1	4	7	15	30							7
2	4	Elementary	5	3	1	2	4								3
2	71	Secondary	3.5	4.5	5.5	6.5	7.5	8.5	9.5	12.5	17.5	22.5			6.5
3	5	Elem. & Sec.	1	1	1	0	Omit								1
4	6	Elem. & Sec.	1	1	1	0	Omit								1
5	7	Elem. & Sec.	1	2	3										2
6	72	Elementary	1	4	5	2	3	6	7						1
		Secondary	1	4	5	2	3	6	7						4
7	73	Elementary	6	5	4	3	2	1							2
		Secondary	6	5	4	3	2	1							1
8	74	Elem. & Sec.	1	0											0
9	75	Elem. & Sec.	.00	.05	.25	.50	.75	.95							.50
10	76	Elem. & Sec.	3.5	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.5				4.5
11	77	Elementary	6	7	8	9	10	11	12	0					8
		Secondary	6	7	8	9	10	11	12	0					10

Continued

Variable Number	Question Item No.		A	B	C	D	E	F	G	H	I	J	K		NR
12	13b	Elem. & Sec.	124	374	674	874	1249	1999	3749	6249	8749	11249			1999
13	80	Elem. & Sec.	3	2	1	0									0
14	82	Elem. & Sec.	0	5	15	25	35	45	55	65	75	85			0
15	83	Elem. & Sec.	0	5	15	25	35	45	55	65	75	85			0
16	13j	Elem. & Sec.	1	0											0
17	13k	Elem. & Sec.	1	0	0										0
18	13l	Elem. & Sec.	1	0	0										0
19	13m	Elem. & Sec.	1	0	0										0
20	13n	Elem. & Sec.	1	1	0	0									0
21	13o	Elem. & Sec.	1	0	0										0
22	84	Elem. & Sec.	0.0	0.0	2.5	7.0	12.0	17.0	30.0	50.0	65.0				0.0
23	13q	Elem. & Sec.	0	1	2	4									1.5
24	85	Elem. & Sec.	0.0	0.0	2.5	7.0	12.0	17.0	30.0	50.0	65.0				0.0
25	14	Elementary	0	5	15	25	35	45	55	65	75	85	95	100	5
		Secondary	0	5	15	25	35	45	55	65	75	85	95	100	75
26	15	Elem. & Sec.	0	5	15	25	35	45	55	65	75	85	95	100	5
27	16	Elementary	1	5	2	6	3	4							4
		Secondary	1	5	2	6	3	4							1
28	17	Elementary	Omit	2.5	6.0	10.5	14.5	16.5							16.5
		Secondary	Omit	2.5	6.0	10.5	14.5	16.5							2.5

Continued

Number	Item No.		A	B	C	D	E	F	G	H	I	J	K		NR
29	18	Elementary	Omit	2	3	4	5	6	7						3
29	19	Secondary	Omit	2	3	4	5	6	7						4
30	20	Elem. & Sec.	1	0											0
31	21	Elem. & Sec.	0	5	15	25	35	45	55	65	75	85	95	100	0
32	22	Elem. & Sec.	1	2	3	4	0								0
33	23	Elementary	1	2	3	4	5	6	7	8	9	0			0
		Secondary	1	2	3	4	5	6	7	8	9	0			1
34	24	Elementary	1	2	3	4	0								0
		Secondary	1	2	3	4	0								3
35	86	Elem. & Sec.	3	2	1	0									0
36	26		Use grid value and divide the response to Item 40 by this to obtain pupil/teacher ratio												
		Elementary													8
		Secondary													26
37	27	Elementary	2	7	12	17	24	39	54						54
		Secondary	2	7	12	17	24	39	54						24
38	28	Elem. & Sec.	0	1	2										0
39	29	Elem. & Sec.	2	1	0										0
40	30	Elem. & Sec.	0	1	2	3	4								0
41	31	Elementary	0	1	2	3	4								0
		Secondary	0	1	2	3	4								4

Continued

Variable Number	Question Item No.		A	B	C	D	E	F	G	H	I	J		K	NR
42	32	Elementary	0	1	2	3	4								0
		Secondary	0	1	2	3	4								1
42	33	Elem. & Sec.	4	3	2	1	0								0
44	34	Elem. & Sec.	0.0	0.5	1.0	1.5	2.0	3.0	4.0						0.7
45	35	Elementary	0.0	0.5	1.0	1.5	2.0	3.0	4.0	5.0	6.0	7.5			0.0
		Secondary	0.0	0.5	1.0	1.5	2.0	3.0	4.0	5.0	6.0	7.5			2.0
46	36	Elementary	0.00	0.25	0.50	1.00	2.50								0.75
		Secondary	0.00	0.25	0.50	1.00	2.50								1.00
47	37	Elementary	0.00	0.25	0.50	1.00									0.37
		Secondary	0.00	0.25	0.50	1.00									0.50
48	38	Elem. & Sec.	0.00	0.25	0.50	1.00									0.00
49	39	Elem. & Sec.	1	0	0	0	0								0
50	40		Use grid value												
		Elementary													417
		Secondary													739
51	42	Elementary	99	97	95	93	91	88	83						96
		Secondary	99	97	95	93	91	88	83						93
52	43	Elementary	0	5	15	25	35	45	55	67	75	85	95	100	55
		Secondary	0	5	15	25	35	45	55	67	75	85	95	100	100
53	44	Elementary	2	7	12	17	22	27							9
		Secondary	2	7	12	17	22	27							2
53	45	Elementary	2	7	12	17	22	27							5
		Secondary	2	7	12	17	22	27							2

Continued

Variable Number	Question Item No.		A	B	C	D	E	F	G	H	I	J	K	NR
55	48a 48g		From 48a through 48g forms a single variable by scoring each item alternative as follows and then sum these											
		Elem. & Sec.	3	2	1	0								0
56	87	Elem. & Sec.	0.5	1.5	4.0	7.5	11.0	0	0					0
57	89	Elem. & Sec.	0	0	0	1								0
58	90a 90s	Elem. & Sec.	For 90a through 90s score a YES response and 1 and a NO or NR as 0 and sum these values to form a single variable											
59	91	Elementary	0.0	0.5	1.5	2.5	3.5	5.5						0.0
		Secondary	0.0	0.5	1.5	2.5	3.5	5.5						0.3
60	92	Elem. & Sec.	2	7	12	17	22	27	0					0
61	93	Elem. & Sec.	2	7	12	17	22	27	0					0
62	94a 94g	Elem. & Sec.	Score a YES response as 1 and a NO or NR as 0 and sum these values to form a single variable											

APPENDIX X

Means, Standard Deviations and Intercorrelations for Total, Elementary and Secondary Principals. The number of schools in the sample and their inflated values using the sampling weights are: Elementary sample, 2,348; Elementary inflated, 57,589; Secondary sample, 1,032; Secondary inflated, 23,264.

The variable numbers, titles and questionnaire numbers (Q#) for the 22 variable sets on the following pages are:

1. Acreage of Plant Site (Q 9)
2. Age of Building (Q 10)
3. Pupils Per Room (Q 11)
4. Centralized Library (Q 13a)
5. Auditorium (Q 13c-i)
6. Gymnasium (Q 13c-i)
7. Cafeteria (Q 13c-i)
8. Athletic Field (Q 13h)
9. Hot Meal Kitchen (Q 13r)
10. Infirmary or Health Room (Q 25)
11. Years as a Principal (Q 56)
12. Years as a Principal in this School (Q 57)
13. Age (Q 58)
14. Sex (Q 59)
15. Highest Degree Held (Q 60)
16. Undergraduate Institution Attended (Q 62)
17. Highest Degree Offered by Undergraduate Institution (Q 63)
18. Area of Undergraduate Institution (Q 64)
19. Credits Beyond Highest Degree (Q 66)
20. Principal's Estimate of School's Reputation (Q 69)
21. Percent of Time Teaching (Q 7o)
22. Principal's Salary (Q 71)

TOTAL PRINCIPALS

```
ALL VARIABLES

THE NUMBER OF OBSERVATIONS IS      81507.

VARIABLE        SUMS         SUMS OF SQUARES        MEAN          SIGMA(N)         SIGMA(N-1)
   1        456573.3555        3394706.7500        5.6016          3.2048             3.2048
   2       1736679.5938       56278182.0000       21.3071         15.3778            15.3779
   3       2138023.4688       71757755.0000       26.2311         13.8678            13.8679
   4         56272.7515          56272.7529        0.6904          0.4623             0.4623
   5         65698.2061          71948.8154        0.8060          0.4827             0.4827
   6         56192.2803          61627.5962        0.6894          0.5299             0.5299
   7         60142.9712          63736.0322        0.7379          0.4873             0.4873
   8         55859.8555          55859.8579        0.6853          0.4644             0.4644
   9         62210.3008          62210.3037        0.7632          0.4251             0.4251
  10         50993.3276          50993.3291        0.6256          0.4840             0.4840
  11        926532.5156       17272856.5000       11.3675          9.0939             9.0939
  12        517673.3477        6865332.2500        6.3513          6.6250             6.6251
  13       3726199.1563      0.17881016E 09       45.7162         10.1895            10.1896
  14         16683.6741          16683.6765        0.2047          0.4035             0.4035
  15        312159.1992        1241591.7031        3.8298          0.7518             0.7518
  16        474896.7500        2878710.5938        5.8264          1.1709             1.1709
  17        196761.4707         600269.0781        2.4140          1.2398             1.2398
  18        170496.3965         385933.7500        2.0918          0.5995             0.5995
  19       1236921.6406       32018773.5000       15.1756         12.7489            12.7490
  20        245684.4258         815562.2109        3.0143          0.9593             0.9593
  21       1579865.0469      0.11668729E 09       19.3831         32.4948            32.4950
  22        769133.9063        8036799.4375        9.4364          3.0914             3.0914
```

TOTAL PRINCIPALS

```
CORRELATION MATRIX      ALL VARIABLES

                      1           2           3           4           5           6           7

  1            1.000000   -0.445174    0.007007    0.337354    0.255740    0.217321    0.288739
  2           -0.445174    1.000000   -0.072287   -0.140156   -0.168806   -0.059765   -0.167052
  3            0.007007   -0.072287    1.000000    0.023747    0.003197   -0.040299    0.023766
  4            0.337354   -0.140156    0.023747    1.000000    0.275814    0.262454    0.192027
  5            0.255740   -0.168806    0.003197    0.275814    1.000000    0.462831    0.468695
  6            0.217321   -0.059765   -0.040299    0.262454    0.462831    1.000000    0.247594
  7            0.288739   -0.167052    0.023766    0.192027    0.468695    0.247594    1.000000
  8            0.396735   -0.173503   -0.078563    0.161547    0.135842    0.159204    0.139439
  9            0.305390   -0.156874    0.017922    0.171569    0.305746    0.177383    0.580305
 10            0.260208   -0.229043    0.079667    0.298425    0.255600    0.181186    0.150855
 11            0.054316   -0.029083    0.048926    0.048767    0.046312    0.007551    0.065029
 12           -0.045679    0.084019    0.029844   -0.013688   -0.010128   -0.008739    0.007006
 13           -0.071913    0.055915    0.011141    0.005295   -0.020522   -0.063469   -0.006390
 14           -0.287715    0.159145   -0.035457   -0.217546   -0.220807   -0.229447   -0.182140
 15            0.231594   -0.130154    0.087152    0.314873    0.220810    0.226214    0.141815
 16            0.055876   -0.034234    0.023615    0.054346    0.038238    0.056415    0.035472
 17            0.055758   -0.055657    0.000862    0.034675    0.036057    0.029336    0.001718
 18            0.102803   -0.074707   -0.042178    0.038044   -0.036433   -0.042303   -0.050468
 19            0.080167   -0.034866    0.070660    0.125732    0.052790    0.019986    0.046758
 20            0.143201   -0.142179   -0.002301    0.127581    0.136965    0.126247    0.135163
 21           -0.281390    0.152126   -0.115425   -0.397344   -0.265199   -0.268047   -0.148070
 22            0.206910   -0.107959    0.104896    0.362202    0.183656    0.289163    0.050490


                      8           9          10          11          12          13          14

  1            0.396735    0.305390    0.260208    0.054316   -0.045679   -0.071913   -0.287715
  2           -0.173503   -0.156874   -0.229043   -0.029083    0.084019    0.055914    0.159145
  3           -0.078563    0.017922    0.079667    0.048928    0.029844    0.011141   -0.035457
  4            0.161547    0.171569    0.298425    0.048767   -0.013688    0.005295   -0.217546
  5            0.135842    0.305746    0.255600    0.046312   -0.010128   -0.020522   -0.220807
  6            0.159204    0.177383    0.181186    0.007551   -0.008739   -0.063469   -0.229447
  7            0.139439    0.580305    0.150855    0.065029    0.007006   -0.006390   -0.182140
  8            1.000000    0.152959    0.131951    0.001161   -0.015567   -0.064886   -0.093976
  9            0.152959    1.000000    0.101329    0.095831    0.039007    0.038795   -0.191592
 10            0.131951    0.101329    1.000000   -0.004862   -0.068754   -0.024325   -0.180532
 11            0.001161    0.095831   -0.004862    1.000000    0.666121    0.619644   -0.029620
 12           -0.015567    0.039007   -0.068754    0.666121    1.000000    0.465218    0.110572
 13           -0.064886    0.038795   -0.024325    0.619644    0.465218    1.000000    0.269087
 14           -0.093976   -0.191592   -0.180532   -0.029620    0.110572    0.269087    1.000000
 15            0.040557    0.114468    0.298042    0.058418   -0.074688    0.006546   -0.310398
 16            0.051779    0.045958    0.064186    0.003553   -0.029778   -0.035458   -0.083724
 17            0.045826    0.009095    0.060575   -0.044258   -0.083300   -0.056803   -0.060845
 18            0.062536    0.007932    0.005317   -0.015187   -0.057159   -0.049465   -0.062123
 19            0.045914    0.062923    0.125101    0.066190    0.019777    0.098124   -0.110770
 20            0.068391    0.110449    0.141402    0.127030    0.111666    0.129784   -0.005330
 21           -0.032030   -0.127323   -0.394432   -0.099332    0.012008   -0.023505    0.300670
 22            0.079576   -0.010085    0.418287    0.112812    0.017468    0.085691   -0.211736
```

TOTAL PRINCIPALS

```
CORRELATION MATRIX      ALL VARIABLES

                 15           16           17           18           19           20           21

  1        0.231594     0.055876     0.055758     0.102803     0.080167     0.143201    -0.281390
  2       -0.130154    -0.034234    -0.055657    -0.074707    -0.034866    -0.142179     0.152126
  3        0.087152     0.023615     0.000862    -0.042178     0.070660    -0.002301    -0.115425
  4        0.314873     0.054346     0.034675     0.038044     0.125732     0.127581    -0.397344
  5        0.220810     0.038238     0.036057    -0.036433     0.052790     0.136965    -0.265199
  6        0.226214     0.056415     0.029336    -0.042303     0.019986     0.126247    -0.268047
  7        0.141815     0.035472     0.001718    -0.050468     0.046758     0.135163    -0.148070
  8        0.040557     0.051779     0.045826     0.062536     0.045914     0.068391    -0.032030
  9        0.114468     0.045958     0.009095     0.007932     0.062923     0.110449    -0.127323
 10        0.298042     0.064186     0.060575     0.005317     0.125101     0.141402    -0.394432
 11        0.058418     0.003553    -0.044258    -0.015187     0.066190     0.127030    -0.099332
 12       -0.074688    -0.029778    -0.083300    -0.057159     0.019777     0.111666     0.012008
 13        0.006546    -0.035457    -0.056803    -0.049464     0.098124     0.129784    -0.023505
 14       -0.310398    -0.083724    -0.060845    -0.062123    -0.110770    -0.005330     0.300670
 15        1.000000     0.117641     0.082289     0.016992     0.048075     0.122527    -0.498103
 16        0.117641     1.000000     0.344478     0.018323     0.068060     0.016408    -0.099887
 17        0.082289     0.344478     1.000000     0.062982     0.020080     0.019700    -0.032623
 18        0.016992     0.018323     0.062982     1.000000     0.023993    -0.009583    -0.017778
 19        0.048075     0.068060     0.020080     0.023993     1.000000     0.078239    -0.141813
 20        0.122527     0.016408     0.019700    -0.009583     0.078239     1.000000    -0.166204
 21       -0.498103    -0.099887    -0.032623    -0.017778    -0.141813    -0.166204     1.000000
 22        0.498386     0.108856     0.104049     0.001372     0.268643     0.175312    -0.532434

                 22

  1        0.206910
  2       -0.107959
  3        0.104896
  4        0.362202
  5        0.183656
  6        0.289163
  7        0.050490
  8        0.079576
  9       -0.010085
 10        0.418287
 11        0.112812
 12        0.017468
 13        0.085692
 14       -0.211736
 15        0.498386
 16        0.108856
 17        0.104049
 18        0.001372
 19        0.268643
 20        0.175312
 21       -0.532434
 22        1.000000
```

ELEMENTARY PRINCIPALS

```
ALL VARIABLES

THE NUMBER OF CBSERVATIONS IS      57589.

VARIABLE        SUMS          SUMS OF SQUARES            MEAN            SIGMA(N)         SIGMA(N-1)
     1       290323.4805       2042113.5781             5.0413            3.1694            3.1695
     2      1245518.6719      40793791.0000            21.6278           15.5114           15.5115
     3      1515023.0313      42809119.0000            26.3075            7.1603            7.1604
     4        34109.7407         34109.7417             0.5923            0.4914            0.4914
     5        43607.1719         46394.0605             0.7572            0.4819            0.4819
     6        32872.8389         35986.9087             0.5708            0.5469            0.5469
     7        40828.8721         43341.5400             0.7090            0.5000            0.5000
     8        37553.8369         37553.8398             0.6521            0.4763            0.4763
     9        40477.5200         40477.5234             0.7029            0.4570            0.4570
    10        35101.0542         35101.0552             0.6095            0.4879            0.4879
    11       630367.6953      11423678.1250            10.9460            8.8629            8.8630
    12       367352.3945       4806750.1875             6.3789            6.5404            6.5404
    13      2631390.9688     0.12633408E 09            45.6927           10.2909           10.2910
    14        15854.5271         15854.5302             0.2753            0.4467            0.4467
    15       215520.0605        843356.6250             3.7424            0.7993            0.7994
    16       333628.2813       2011665.9844             5.7933            1.1702            1.1703
    17       138032.7344        418060.0078             2.3969            1.2306            1.2306
    18       118950.8965        266698.3750             2.0655            0.6039            0.6039
    19       164382.8477        577908.9766             2.8544            1.3738            1.3738
    20       173588.8340        577578.3203             3.0143            0.9713            0.9713
    21      1378363.6406     0.10426753E 09            23.9345           35.1808           35.1811
    22       524544.8594       5290509.3125             9.1084            2.9838            2.9839
```

ELEMENTARY PRINCIPLLS

```
CORRELATION MATRIX      ALL VARIABLES

                   1               2               3               4               5               6               7

   1            1.000000       -0.486008        0.120893        0.295837        0.287650        0.167681        0.316569
   2           -0.486008        1.000000       -0.117423       -0.160521       -0.238337       -0.084818       -0.228787
   3            0.120893       -0.117423        1.000000        0.064488        0.040093        0.032708        0.055551
   4            0.295837       -0.160521        0.064488        1.000000        0.280398        0.161832        0.175900
   5            0.287650       -0.238337        0.040093        0.280398        1.000000        0.473110        0.511820
   6            0.167681       -0.084818        0.032708        0.161832        0.473110        1.000000        0.226775
   7            0.316569       -0.228787        0.055551        0.175900        0.511820        0.226775        1.000000
   8            0.374286       -0.213607       -0.055909        0.123240        0.133627        0.127043        0.136289
   9            0.288878       -0.189839        0.055970        0.103018        0.328782        0.102747        0.625718
  10            0.313729       -0.266514        0.152800        0.321569        0.317686        0.199928        0.177936
  11            0.060260       -0.026676        0.060195        0.035381        0.075057       -0.003667        0.079228
  12           -0.046704        0.093226        0.026725       -0.017927       -0.000028       -0.002929        0.022991
  13           -0.073549        0.058376        0.013477        0.016565        0.004579       -0.067942        0.006847
  14           -0.255023        0.176998       -0.090064       -0.139978       -0.227725       -0.162982       -0.184627
  15            0.224518       -0.147580        0.229259        0.295111        0.267996        0.202899        0.152265
  16            0.059232       -0.051722        0.074762        0.042478        0.043098        0.050971        0.039761
  17            0.064319       -0.054372       -0.023910        0.045201        0.040830        0.043805       -0.000979
  18            0.100800       -0.078455       -0.061378        0.024528       -0.052506       -0.082478       -0.034459
  19            0.088727       -0.045672        0.072375        0.117361        0.075201       -0.006343        0.068313
  20            0.166759       -0.172279        0.059687        0.141710        0.182136        0.145864        0.177057
  21           -0.268611        0.167226       -0.278034       -0.367750       -0.314104       -0.237525       -0.162399
  22            0.223215       -0.114748        0.233747        0.360130        0.246409        0.299253        0.034637


                   8               9              10              11              12              13              14

   1            0.374286        0.288878        0.313729        0.060260       -0.046704       -0.073549       -0.255023
   2           -0.213607       -0.189839       -0.266514       -0.026676        0.093226        0.058376        0.176998
   3           -0.055909        0.055970        0.152800        0.060195        0.026725        0.013477       -0.090064
   4            0.123240        0.103018        0.321569        0.035381       -0.017927        0.016565       -0.139978
   5            0.133627        0.328782        0.317686        0.075057       -0.000028        0.004579       -0.227725
   6            0.127043        0.102747        0.199928       -0.003667       -0.002929       -0.067942       -0.162982
   7            0.136289        0.625718        0.177936        0.079228        0.022991        0.006847       -0.184627
   8            1.000000        0.130809        0.153590        0.022120       -0.004946       -0.052258       -0.071634
   9            0.130809        1.000000        0.096316        0.089253        0.045142        0.037733       -0.152099
  10            0.153590        0.096316        1.000000        0.010135       -0.078518       -0.036787       -0.202555
  11            0.022120        0.089253        0.010135        1.000000        0.671711        0.595445       -0.013602
  12           -0.004946        0.045142       -0.078518        0.671711        1.000000        0.453858        0.127026
  13           -0.052258        0.037733       -0.036787        0.595445        0.453858        1.000000        0.322372
  14           -0.071634       -0.152099       -0.202555       -0.013602        0.127026        0.322372        1.000000
  15            0.039042        0.078486        0.334076        0.044849       -0.090612       -0.004198       -0.300859
  16            0.057230        0.037790        0.066791        0.005019       -0.035489       -0.034079       -0.082027
  17            0.047081        0.013273        0.081899       -0.036887       -0.086257       -0.047820       -0.073737
  18            0.060573       -0.008602        0.005059       -0.032909       -0.063769       -0.067437       -0.054584
  19            0.043523        0.033405        0.122631        0.051095        0.008652        0.099379       -0.105569
  20            0.060368        0.125479        0.132507        0.141821        0.108399        0.146556       -0.004031
  21           -0.019008       -0.085834       -0.442516       -0.079849        0.033167       -0.005928        0.271274
  22            0.089807       -0.087815        0.436304        0.107627        0.006976        0.065580       -0.198242
```

ELEMENTARY PRINCIPALS

```
CORRELATION MATRIX       ALL VARIABLES

                    15            16            17            18            19            20            21

  1           0.224518      0.059232      0.064319      0.100800      0.088727      0.166759     -0.268611
  2          -0.147580     -0.051722     -0.054372     -0.078455     -0.045672     -0.172279      0.167226
  3           0.229259      0.074762     -0.023910     -0.061378      0.072375      0.059687     -0.278034
  4           0.295111      0.042478      0.045201      0.024528      0.117361      0.141710     -0.367750
  5           0.267996      0.043098      0.040830     -0.052506      0.075201      0.182136     -0.314104
  6           0.202899      0.050971      0.043805     -0.082478     -0.006343      0.145864     -0.232525
  7           0.152265      0.039761     -0.000979     -0.034459      0.068313      0.177057     -0.162399
  8           0.039042      0.057230      0.047081      0.060573      0.043523      0.060368     -0.019008
  9           0.078486      0.037790      0.013273     -0.008602      0.033405      0.125479     -0.085834
 10           0.334076      0.066791      0.081899      0.005059      0.122631      0.132508     -0.442516
 11           0.044849      0.005019     -0.036887     -0.032909      0.051095      0.141821     -0.079849
 12          -0.090612     -0.035489     -0.086257     -0.063769      0.008652      0.108399      0.033167
 13          -0.004198     -0.034079     -0.047820     -0.067437      0.099380      0.146557     -0.005928
 14          -0.300859     -0.082027     -0.073737     -0.054584     -0.105569     -0.004031      0.271274
 15           1.000000      0.120532      0.092627      0.002195      0.050840      0.139220     -0.504843
 16           0.120532      1.000000      0.333902      0.015569      0.072460      0.014867     -0.107778
 17           0.092627      0.333902      1.000000      0.067955      0.004112      0.014768     -0.046342
 18           0.002195      0.015569      0.067955      1.000000      0.016106     -0.004827     -0.003799
 19           0.050840      0.072460      0.004112      0.016106      1.000000      0.078646     -0.136005
 20           0.139220      0.014867      0.014768     -0.004827      0.078646      1.000000     -0.190472
 21          -0.504843     -0.107778     -0.046342     -0.003799     -0.136005     -0.190472      1.000000
 22           0.510055      0.108408      0.089136     -0.026446      0.257605      0.172565     -0.563140


                    22

  1           0.223215
  2          -0.114748
  3           0.233747
  4           0.360130
  5           0.246409
  6           0.299253
  7           0.034637
  8           0.089807
  9          -0.087815
 10           0.436304
 11           0.107627
 12           0.006976
 13           0.065580
 14          -0.198242
 15           0.510055
 16           0.108408
 17           0.089136
 18          -0.026446
 19           0.257605
 20           0.172565
 21          -0.563140
 22           1.000000
```

SECONDARY PRINCIPALS

```
ALL VARIABLES


THE NUMBER OF CBSERVATIONS IS       23264.

VARIABLE        SUMS        SUMS OF SQUARES            MEAN            SIGMA(N)         SIGMA(N-1)
    1       162456.4922      1325219.0781             6.9831            2.8636             2.8637
    2       478108.7891     15038433.7500            20.5512           14.9688            14.9692
    3       579790.0859     16459329.3750            24.9219            9.2948             9.2950
    4        21731.2344        21731.2344             0.9341            0.2481             0.2481
    5        21799.7825        25247.6536             0.9370            0.4552             0.4552
    6        23037.3867        25317.0398             0.9902            0.3281             0.3281
    7        18886.8364        19949.3340             0.8118            0.4455             0.4455
    8        17971.2458        17971.2463             0.7725            0.4192             0.4192
    9        21174.4993        21174.4998             0.9102            0.2859             0.2859
   10        15486.5642        15486.5649             0.6657            0.4718             0.4718
   11       285204.3398      5574428.0000            12.2593            9.4510             9.4512
   12       144791.6758      1982520.0938             6.2238            6.8178             6.8179
   13      1062040.7813     50781698.5000            45.6511            9.9396             9.9398
   14          771.8356          771.8357             0.0332            0.1791             0.1791
   15        94127.0801       388394.9805             4.0460            0.5700             0.5700
   16       135516.8379       810637.3750             5.8251            0.9555             0.9555
   17        66574.9873       206955.1914             2.8617            0.8406             0.8406
   18        50230.2017       116438.5430             2.1591            0.5859             0.5859
   19       388717.3711     10410191.5000            16.7087           12.9728            12.9730
   20        71239.4551       236129.6699             3.0622            0.8792             0.8792
   21       193937.0313     11951987.3750             8.3362           21.0773            21.0778
   22       238491.7422      2683567.5625            10.2514            3.2031             3.2032
```

SECONDARY PRINCIPALS

```
CORRELATION MATRIX      ALL VARIABLES

                 1             2             3             4             5             6             7

  1       1.000000     -0.371317     -0.036608      0.195859      0.037270     -0.010920      0.14379
  2      -0.371317      1.000000     -0.005037     -0.063464      0.029776      0.076535      0.02197
  3      -0.036608     -0.005037      1.000000      0.001726     -0.076429     -0.055128     -0.03294
  4       0.195859     -0.063464      0.001726      1.000000      0.051949      0.171758      0.16704
  5       0.037270      0.029776     -0.076429      0.051949      1.000000      0.321066      0.30895
  6      -0.010920      0.076535     -0.055128      0.171758      0.321066      1.000000      0.23657
  7       0.143795      0.021978     -0.032949      0.167041      0.308955      0.236577      1.00000
  8       0.413307     -0.067334     -0.102245      0.169942      0.069553      0.117586      0.11603
  9       0.160136     -0.028941     -0.048523      0.105664      0.090710      0.155137      0.39372
 10       0.096557     -0.125294      0.042790      0.240066      0.077710      0.083943      0.05694
 11      -0.016870     -0.028057     -0.018944     -0.006044     -0.051268     -0.064002      0.00372
 12      -0.038763      0.061480     -0.001034      0.006857     -0.024391     -0.008043     -0.03303
 13      -0.070013      0.048130     -0.021492     -0.051074     -0.086683     -0.069912     -0.04940
 14      -0.130857      0.074468      0.003365     -0.135283      0.021034      0.006369     -0.05097
 15       0.067662     -0.059112      0.016432      0.151101     -0.053927      0.025804      0.03509
 16       0.043308      0.039080      0.045442      0.066646      0.001483      0.013780      0.03711
 17       0.039410     -0.046496     -0.000812     -0.026278      0.010112     -0.036224      0.00045
 18       0.038529     -0.054484     -0.068910     -0.033686     -0.040871     -0.044333     -0.12648
 19      -0.000450     -0.008321      0.087572      0.062099     -0.015815      0.019144     -0.02217
 20       0.088710     -0.076675      0.007347      0.122293      0.021558      0.073126      0.02434
 21      -0.092431      0.088495     -0.109753     -0.254077      0.061816     -0.055400     -0.001396
 22       0.039055     -0.080330      0.045447      0.267197     -0.042985      0.096770      0.037848


                 8             9            10            11            12            13            14

  1       0.413307      0.160136      0.096557     -0.016870     -0.038763     -0.070013     -0.130857
  2      -0.067334     -0.028941     -0.125294     -0.028057      0.061480      0.048130      0.074468
  3      -0.102245     -0.048523      0.042790     -0.018944     -0.001034     -0.021492      0.003365
  4       0.169942      0.105664      0.240066     -0.006044      0.006857     -0.051074     -0.135283
  5       0.069553      0.090710      0.077710     -0.051268     -0.024391     -0.086683      0.021034
  6       0.117586      0.155137      0.083943     -0.064002     -0.008043     -0.069912      0.006369
  7       0.116031      0.393722      0.056948      0.003723     -0.033038     -0.049401     -0.050971
  8       1.000000      0.136667      0.052241     -0.076017     -0.038640     -0.100346     -0.041055
  9       0.136667      1.000000      0.087935      0.052899      0.025147      0.035491     -0.042840
 10       0.052241      0.087935      1.000000     -0.054508     -0.048000      0.009591     -0.050108
 11      -0.076017      0.052899     -0.054508      1.000000      0.656018      0.681997      0.006952
 12      -0.038640      0.025147     -0.048000      0.656018      1.000000      0.489756      0.083305
 13      -0.100346      0.035491      0.009591      0.681997      0.489756      1.000000      0.114157
 14      -0.041055     -0.042840     -0.050108      0.006952      0.083305      0.114157      1.000000
 15      -0.055187      0.072709      0.165091      0.059009     -0.024871      0.048617     -0.098794
 16       0.018967      0.100938      0.148264      0.030958      0.045523      0.039643     -0.017643
 17       0.047685     -0.031925      0.018104     -0.095035     -0.102990     -0.087322     -0.011563
 18       0.035121     -0.010619     -0.005156      0.014386     -0.037903      0.000948     -0.008194
 19       0.024116      0.107839      0.147828      0.077944      0.042833      0.108520     -0.010006
 20       0.078487      0.074216      0.165784      0.086845      0.119759      0.082321      0.004900
 21       0.046084     -0.071624     -0.226909     -0.116860     -0.068929     -0.099944      0.122932
 22      -0.012066      0.078302      0.369578      0.087448      0.040304      0.137394     -0.115181
```

SECONDARY PRINCIPALS

```
CORRELATION MATRIX      ALL VARIABLES

                15                 16                 17                 18                 19                 20                 21    

  1           0.067662           0.043308           0.039410           0.038529          -0.000450           0.088710          -0.092431
  2          -0.059112           0.039080          -0.046497          -0.054484          -0.008321          -0.076675           0.088495
  3           0.016432           0.045442          -0.000812          -0.068910           0.087572           0.007347          -0.109753
  4           0.151101           0.066646          -0.026278          -0.033686           0.062099           0.122293          -0.254077
  5          -0.053927           0.001483           0.010112          -0.040871          -0.015815           0.021558           0.061816
  6           0.025804           0.013780          -0.036224          -0.044333           0.019144           0.073126          -0.055400
  7           0.035097           0.037119           0.000452          -0.126482          -0.022172           0.024343          -0.001396
  8          -0.055187           0.018967           0.047685           0.035121           0.024116           0.078487           0.046084
  9           0.072709           0.100938          -0.031925          -0.010619           0.107839           0.074216          -0.071624
 10           0.165091           0.148264           0.018104          -0.005156           0.147828           0.165784          -0.226909
 11           0.059009           0.030958          -0.095035           0.014386           0.077944           0.086845          -0.116860
 12          -0.024871           0.045523          -0.102990          -0.037903           0.042833           0.119759          -0.068929
 13           0.048617           0.039643          -0.087322           0.000948           0.108520           0.082321          -0.099944
 14          -0.098794          -0.017643          -0.011563          -0.008194          -0.010006           0.004900           0.122932
 15           1.000000           0.138821           0.059915           0.014504           0.039091           0.078597          -0.321989
 16           0.138821           1.000000           0.198140           0.012454           0.109052           0.026373          -0.098849
 17           0.059914           0.198140           1.000000           0.066898           0.053800           0.047265          -0.001665
 18           0.014504           0.012454           0.066898           1.000000           0.025936          -0.027784           0.001125
 19           0.039091           0.109052           0.053800           0.025936           1.000000           0.086566          -0.149190
 20           0.078597           0.026373           0.047265          -0.027784           0.086566           1.000000          -0.090075
 21          -0.321989          -0.098849          -0.001665           0.001125          -0.149190          -0.090075           1.000000
 22           0.423685           0.169003           0.143509           0.027846           0.274101           0.183462          -0.403032


                22    

  1           0.039055
  2          -0.080330
  3           0.045447
  4           0.267197
  5          -0.042985
  6           0.096770
  7           0.037847
  8          -0.012066
  9           0.078302
 10           0.369578
 11           0.087448
 12           0.040304
 13           0.137394
 14          -0.115181
 15           0.423685
 16           0.169003
 17           0.143509
 18           0.027846
 19           0.274101
 20           0.183461
 21          -0.403032
 22           1.000000
```

The variable numbers and titles for the 62 variable sets on the following pages are:

1. Free Kindergarten (Elementary ((Q 3)
1. College Representatives (Secondary) (Q's 53, 54)
2. Free Nursery (Elementary) (Q 4)
2. Principal's Salary (Secondary) (Q 71)
3. State Accreditation (Q 5)
4. Regional Accreditation (Q 6)
5. Compulsory Attendance Law (Q 7)
6. Rural-Urban Location (Q 72)
7. Principal's Estimate of Student's Socio-Economic Status (Q 73)
8. Public Library (Q 74)
9. PTA Attendance (Q 75)
10. Length of School Day (Q 76)
11. Courses from Different Teachers (Q 77)
12. Volumes in Library (Q 13b)
13. Grouping (Q 80)
14. Percent Highest Track (Q 82)
15. Percent Lowest Track (Q 83)
16. Shop Tools (Q 13j)
17. Biology Lab (Q 13k)
18. Chemistry Lab (Q 13
19. Physics Lab (Q 13m)
20. Language Lab (Q 13n)
21. Typing Room (Q 13o)

22. Percent to Higher Track (Q 84)

23. Movie Projectors (Q 13q)

24. Percent to Lower Track (Q 85)

25. Percent Free Lunch (Q 14)

26. Percent Free Milk (Q 15)

27. Texts Provided (Q 16)

28. Age of Texts (Q 17)

29. Third Grade Reader (Elementary) (Q 18)

29. Biology Text (Secondary) (Q 19)

30. Availability of Texts (Q 20)

31. Percent of Students in Part-Time Attendance (Q 21)

32. Intelligence Testing (Q 22)

33. Achievement Testing (Q 23)

34. Interest Testing (Q 24)

35. Accelerated Curriculum (Q 86)

36. Pupils Per Teacher (Q 26)

37. Teacher Turnover (Q 27)

38. Teacher Tenure (Q 28)

39. Teacher Exams (Q 29)

40. Art Teacher (Q 30)

41. Music Teacher (Q 31)

42. Speech Teacher (Q 32)

43. Mental Health (Q 33)

44. Reading Teachers (Q 34)

45. Guidance Counselors (Q 35)

46. Librarian (Q 36)

47. Nurse (Q 37)

48. Attendance Officer (Q 38)

49. Pupil Assignment (Q 39)

50. Enrollment (Q 40)

51. Daily Attendance (Q 42)

52. Percent White (Q 43)

53. Student Transfers In (Q 44)

54. Student Transfers Out (Q 45)

55. Principal's Estimate of School Problems (Q 48a-g)

56. Non-Whites Entered (Q 87)

57. Promotion Policy (Q 89)

58. Extra-Curricular Activities (Q 90)

59. Homework (Q 91)

60. Remedial Math (Q 92)

61. Remedial Reading (Q 93)

62. Special Classes (Q 94)

TOTAL PRINCIPALS

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ALL VARIABLES

THE NUMBER OF OBSERVATIONS IS      81507.

VARIABLE          SUMS        SUMS OF SQUARES            MEAN        SIGMA(N)      SIGMA(N-1)
     1         224954.3652        931465.0938          2.7599          1.9521          1.9521
     2         247542.0449        759236.9922          3.0371          0.3021          0.3021
     3          71446.3711         71446.4033          0.8766          0.3289          0.3289
     4          46365.8228         46365.9756          0.5689          0.4952          0.4952
     5         221514.2324        626025.6641          2.7177          0.5428          0.5428
     6         257667.5137       1111437.3594          3.1613          1.9085          1.9085
     7         274633.4023       1057540.5781          3.3694          1.2735          1.2735
     8          37803.0356         37803.0391          0.4638          0.4987          0.4987
     9          18646.3035          8035.9757          0.2288          0.2151          0.2151
    10         490460.3398       2992703.5625          6.0174          0.7128          0.7128
    11         341131.5586       2462680.1875          4.1853          3.5634          3.5634
    12      0.24778189E 09     0.14357465E 13       3039.9989       2893.6768       2893.6945
    13         107547.1768        306843.2930          1.3195          1.4225          1.4225
    14         966724.3359      34255465.0000         11.8606         16.7213         16.7214
    15         910364.2891      31792718.0000         11.1691         16.2884         16.2885
    16          24171.5146         24171.5168          0.2966          0.4567          0.4567
    17          21724.5088         21724.5112          0.2665          0.4421          0.4421
    18          19163.7476         19163.7502          0.2351          0.4241          0.4241
    19          16962.6216         16962.6238          0.2081          0.4060          0.4060
    20          16625.2874         16625.2893          0.2040          0.4029          0.4030
    21          16994.5549         16994.5569          0.2085          0.4062          0.4062
    22         213806.7754       3902331.2188          2.6232          6.4028          6.4029
    23         151406.3398        415160.0117          1.8576          1.2818          1.2818
    24         117443.3994        879227.6875          1.4409          2.9514          2.9514
    25         636051.8281      27727790.7500          7.8036         16.7120         16.7121
    26         660276.6094      35596650.0000          8.1008         19.2641         19.2642
    27         132008.8867        356290.9102          1.6196          1.3222          1.3222
    28         314179.2773       1529013.2344          3.8546          1.9751          1.9751
    29         263301.7266        946705.1641          3.2304          1.0860          1.0860
    30          77663.2158         77663.2158          0.9528          0.2120          0.2120
    31         257536.6875      19928028.0000          3.1597         15.3137         15.3138
    32         197515.5156        601734.1563          2.4233          1.2289          1.2289
    33         353120.4883       1974994.8438          4.3324          2.3370          2.3370
    34          36312.9624         88691.5605          0.4455          0.9432          0.9432
    35          65380.5845        141727.2988          0.8021          1.0466          1.0466
    36        2069057.0781      55011419.5000         25.3850          5.5255          5.5255
    37         878600.6172      23227417.5000         10.7794         12.9915         12.9915
    38         102021.9805        197424.5254          1.2517          0.9249          0.9249
    39          15477.2725         29153.8745          0.1899          0.5671          0.5671
    40          99022.7344        334933.0586          1.2149          1.6227          1.6227
    41         171289.9863        584343.7109          2.1015          1.6592          1.6592
    42          62881.4336        115749.5908          0.7715          0.9083          0.9083
    43         131576.0605        314791.2383          1.6143          1.1208          1.1208
    44          27879.0183         47493.5122          0.3420          0.6824          0.6824
    45          44004.4458        125824.7334          0.5399          1.1190          1.1190
    46          36209.8926         39133.5718          0.4443          0.5318          0.5318
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TOTAL PRINCIPALS

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ALL VARIABLES

THE NUMBER OF CBSERVATIONS IS      81507.

VARIABLE        SUMS          SUMS OF SQUARES           MEAN          SIGMA(N)       SIGMA(N-1)
   47        27459.2368        17719.3008             0.3369          0.3223          0.3223
   48        35206.1831        27669.4448             0.4319          0.3910          0.3910
   49        33675.5908        33675.5938             0.4132          0.4924          0.4924
   50     42771747.0000     0.37243877E 11          524.7602        426.1060        426.1086
   51      7721749.9375     0.73223842E 09           94.7370          2.9369          2.9369
   52      6213743.2500     0.58296016E 09           76.2355         36.6115         36.6117
   53       523390.3906       6724794.9375            6.4214          6.4243          6.4243
   54       522297.8711       6883456.9375            6.4080          6.5871          6.5871
   55       158696.5117        696795.7813            1.9470          2.1813          2.1813
   56       298141.1602       2805032.8438            3.6578          4.5864          4.5864
   57        35291.7935         35291.8369            0.4330          0.4955          0.4955
   58       462468.7656       4413546.1250            5.6740          4.6856          4.6857
   59        85426.0273        133115.0000            1.0481          0.7312          0.7312
   60       218771.5156       2385067.0000            2.6841          4.6966          4.6966
   61       329077.9570       4178487.5313            4.0374          5.9131          5.9131
   62       137154.9180        433337.7695            1.6827          1.5764          1.5764
```

TOTAL PRINCIPALS

CORRELATION MATRIX ALL VARIABLES

	1	2	3	4	5	6	7
1	1.000000	0.119395	0.063629	0.203526	0.317837	0.405957	0.219924
2	0.119395	1.000000	0.025756	0.062787	0.055228	0.114573	-0.068522
3	0.063629	0.025756	1.000000	0.462948	0.161555	0.055406	0.094617
4	0.203526	0.062787	0.462948	1.000000	0.206509	0.231851	0.211037
5	0.317837	0.055228	0.161555	0.206509	1.000000	0.122945	0.102878
6	0.405957	0.114573	0.055406	0.231851	0.122945	1.000000	0.387199
7	0.219924	-0.068522	0.094617	0.211037	0.102878	0.387199	1.000000
8	0.262300	0.061934	0.048691	0.134404	0.149217	0.375746	0.274324
9	0.011965	-0.004939	-0.041625	-0.034233	0.030230	0.039570	0.172534
10	-0.377195	-0.028880	0.051660	-0.028478	-0.154916	-0.164222	-0.034101
11	-0.063280	-0.007963	0.139335	0.076824	-0.083173	-0.011947	0.093533
12	0.189004	0.056235	0.124688	0.169652	0.073504	0.321026	0.259095
13	0.020935	0.042200	0.033185	0.124003	0.033874	0.169422	0.143207
14	-0.027918	0.004154	0.017681	0.039552	-0.001589	0.010821	0.133366
15	-0.045715	0.059038	-0.018418	0.039082	-0.059936	0.028794	0.037205
16	-0.106890	0.000095	0.158728	0.093495	-0.047816	-0.007662	0.001785
17	-0.129916	0.004662	0.169311	0.128841	-0.099500	-0.051849	0.028906
18	-0.120408	0.001869	0.184710	0.132695	-0.106603	-0.080666	-0.016269
19	-0.102740	-0.010638	0.184041	0.145018	-0.077282	-0.059129	0.015135
20	0.043698	0.029129	0.079026	0.143675	0.019725	0.122047	0.120045
21	-0.167354	0.010833	0.144323	0.092508	-0.104781	-0.028019	0.018195
22	-0.026359	-0.004325	-0.022727	0.018222	-0.009274	0.039523	0.067422
23	0.209307	0.049988	0.135472	0.192423	0.076253	0.289075	0.229230
24	-0.004539	-0.019616	0.000543	0.037945	-0.005851	0.088390	0.095167
25	-0.123947	0.045771	-0.024303	-0.061833	-0.106896	-0.160265	-0.172998
26	-0.085953	0.047302	-0.019931	-0.030711	-0.029563	-0.178962	-0.215896
27	-0.072711	-0.047691	0.036062	0.013228	-0.145593	-0.082877	-0.019316
28	0.002911	0.022893	-0.038413	-0.009859	0.004022	-0.030657	-0.069401
29	-0.129940	-0.010646	0.020873	-0.042365	-0.047083	-0.009527	-0.058819
30	0.059743	0.003066	0.078938	0.102390	0.159676	0.014372	0.055712
31	0.016671	0.076529	-0.043641	0.010140	-0.026917	0.008049	-0.017277
32	0.063090	0.028270	0.004507	-0.009135	0.033625	-0.022574	0.034623
33	-0.003190	-0.006951	0.065263	0.002215	0.021485	-0.152175	-0.091503
34	-0.062966	0.018064	0.058375	0.106101	-0.025683	-0.014728	0.000899
35	0.081331	-0.013549	0.045978	0.102242	0.091165	0.147124	0.183512
36	0.178210	-0.014109	-0.165166	-0.086252	-0.103893	0.204395	0.146504
37	-0.025759	-0.032445	0.014028	0.016810	0.018243	-0.073849	-0.036582
38	0.305547	0.059220	0.023704	0.152156	0.291530	0.209610	0.129061
39	-0.029706	0.012347	-0.142028	-0.078666	-0.243732	0.203070	0.012078
40	0.213571	0.030080	0.132206	0.192123	0.132079	0.241030	0.260660
41	0.102651	0.007974	0.213905	0.191565	0.073341	0.107036	0.230034
42	0.366869	0.059256	0.066558	0.140972	0.256385	0.336342	0.247542
43	0.416553	0.075080	0.008665	0.094441	0.277805	0.311243	0.268220
44	0.091399	0.104318	0.017202	0.030303	0.031192	0.190472	0.070923
45	-0.013945	0.058953	0.096732	0.175237	0.035869	0.229762	0.138041
46	0.043866	0.037740	0.078883	0.103184	-0.036541	0.188329	0.182133
47	0.403625	0.033924	0.107116	0.207720	0.232004	0.394652	0.333092
48	0.077834	0.048333	-0.028286	-0.000665	0.209891	0.169613	0.056818
49	0.223272	0.001958	0.001884	0.075585	0.187320	0.148652	0.087560
50	0.216823	0.052347	0.087864	0.163691	0.002082	0.436741	0.295880

TOTAL PRINCIPALS

```
CORRELATION MATRIX      ALL VARIABLES

                        1             2             3             4             5             6             7

   51            0.002922     -0.044446      0.064240      0.066974      0.242143     -0.095077      0.104699
   52            0.060111     -0.138158      0.145018      0.121500      0.235141     -0.063268      0.268652
   53            0.141016      0.021057     -0.000790      0.061785      0.045238      0.257323      0.132768
   54            0.119322      0.052627      0.011694      0.059648      0.061561      0.239396      0.068601
   55            0.097305      0.084762      0.046546      0.047860     -0.113829      0.185341     -0.031587
   56            0.350798      0.084506      0.085139      0.171187      0.195760      0.247086      0.097693
   57            0.063165      0.025096     -0.073976     -0.082927      0.077799      0.018127     -0.034292
   58           -0.016573      0.006910      0.173660      0.144171     -0.033325      0.089180      0.121347
   59           -0.299419      0.000704      0.039953     -0.004605     -0.163381     -0.119557      0.003501
   60           -0.008441      0.018451      0.014675      0.061191     -0.054588      0.072305      0.005594
   61            0.093418      0.046665      0.054212      0.075087     -0.005649      0.150659      0.050599
   62            0.331503      0.054127      0.083883      0.158514      0.212597      0.356529      0.305778
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TOTAL PRINCIPALS

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CORRELATION MATRIX      ALL VARIABLES

                  8            9            10           11           12           13           14

   51        -0.048382     0.117624    -0.031371    -0.107220    -0.070857    -0.081594    -0.036330
   52        -0.008118     0.064107    -0.046879     0.012689     0.053966    -0.035447    -0.020467
   53         0.103174     0.001957    -0.101988    -0.096109     0.108448     0.013295    -0.031124
   54         0.123320     0.007526    -0.077961    -0.135228     0.072721    -0.030975    -0.029556
   55         0.142621    -0.157620     0.037801     0.197454     0.239886     0.127087     0.023621
   56         0.270238    -0.051308    -0.168092     0.063232     0.237489     0.086096     0.031970
   57        -0.036351     0.057358    -0.113928    -0.202242    -0.071990    -0.036259    -0.066471
   58         0.148018    -0.113622     0.242337     0.630304     0.543927     0.292650     0.165995
   59         0.021882    -0.078273     0.324705     0.479508     0.260438     0.139800     0.129115
   60         0.066305    -0.037814     0.076552     0.199775     0.188619     0.258579     0.169380
   61         0.134825    -0.068622     0.007640     0.155886     0.195860     0.256528     0.167485
   62         0.257504     0.022345    -0.097837     0.128335     0.340712     0.263013     0.130916
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TOTAL PRINCIPALS

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CORRELATION MATRIX       ALL VARIABLES

                 8            9            10           11           12           13           14

   1         0.262300     0.011965    -0.377195    -0.063280     0.189004     0.020935    -0.027916
   2         0.061934    -0.004939    -0.028881    -0.007963     0.056235     0.042200     0.004154
   3         0.048691    -0.041625     0.051660     0.139335     0.124688     0.033185     0.017681
   4         0.134404    -0.034233    -0.028478     0.076824     0.169652     0.124003     0.039552
   5         0.149217     0.030230    -0.154916    -0.083173     0.073504     0.033874    -0.001589
   6         0.375746     0.039570    -0.164222    -0.011947     0.321026     0.169422     0.010821
   7         0.274324     0.172534    -0.034101     0.093533     0.259095     0.143207     0.133366
   8         1.000000    -0.001500    -0.108582     0.089833     0.283730     0.120254     0.054700
   9        -0.001500     1.000000    -0.001866    -0.144823    -0.038868    -0.016147     0.079650
  10        -0.108582    -0.001866     1.000000     0.243785     0.119646     0.051967     0.097026
  11         0.089833    -0.144823     0.243785     1.000000     0.350446     0.216864     0.140990
  12         0.283730    -0.038868     0.119646     0.350446     1.000000     0.260031     0.118321
  13         0.120254    -0.016147     0.051967     0.216864     0.260031     1.000000     0.607074
  14         0.054700     0.079650     0.097026     0.140990     0.118321     0.607074     1.000000
  15         0.044115    -0.002229     0.087042     0.154509     0.089456     0.578628     0.697097
  16         0.101875    -0.174684     0.276885     0.604785     0.414502     0.227453     0.103434
  17         0.044257    -0.117987     0.280243     0.567254     0.382539     0.168150     0.102019
  18         0.029650    -0.145854     0.257895     0.547143     0.349187     0.142382     0.110018
  19         0.049674    -0.134559     0.245963     0.532404     0.359530     0.154716     0.108317
  20         0.140017    -0.098291     0.128458     0.378247     0.398405     0.236443     0.086592
  21         0.061543    -0.154021     0.264449     0.551427     0.406003     0.197191     0.104438
  22         0.012700     0.050369     0.080360     0.085409     0.060047     0.373418     0.383103
  23         0.220517    -0.046977     0.102500     0.343764     0.563920     0.266524     0.150845
  24         0.108042    -0.050634     0.083690     0.177531     0.156892     0.451233     0.383200
  25        -0.081730    -0.021358     0.075194    -0.014700    -0.054011    -0.005172     0.019444
  26        -0.097958    -0.011073     0.065091    -0.040991    -0.084809    -0.039909    -0.022213
  27        -0.017135    -0.014647     0.054405     0.105411     0.022529    -0.028075     0.003514
  28        -0.030557     0.010600    -0.051999    -0.053526    -0.066951    -0.024823     0.032537
  29        -0.023497    -0.090620     0.068457    -0.033979    -0.013068    -0.014246    -0.017358
  30         0.042518     0.049765    -0.040992    -0.026180     0.032283    -0.019370    -0.027719
  31        -0.035099     0.037992     0.065698    -0.005643     0.000899     0.016271     0.040352
  32        -0.018256     0.076981     0.028581     0.004899    -0.045045    -0.071042     0.010394
  33        -0.094039     0.043717    -0.012268    -0.008202    -0.115447    -0.072101    -0.017611
  34         0.030472    -0.028292     0.159868     0.272208     0.193507     0.130416     0.089159
  35         0.144133     0.073951     0.048365     0.149689     0.265528     0.296204     0.152461
  36         0.042021     0.065289    -0.119632    -0.228092    -0.077216    -0.084193    -0.018468
  37        -0.085550    -0.011402     0.006330     0.037523    -0.038256    -0.038921    -0.025889
  38         0.164523     0.029175    -0.184453    -0.018424     0.139002     0.071913     0.030636
  39         0.044079     0.008786    -0.011700     0.007433     0.009533     0.097386     0.064123
  40         0.217484    -0.074331     0.092959     0.351433     0.454499     0.288940     0.121007
  41         0.222143    -0.074338     0.167325     0.420926     0.443708     0.202078     0.141854
  42         0.203521     0.077035    -0.173228    -0.072234     0.208096     0.080054     0.030033
  43         0.211028     0.081289    -0.194866    -0.007909     0.293586     0.162281     0.068635
  44         0.143921    -0.026894     0.017387     0.123190     0.236140     0.219526     0.116984
  45         0.181341    -0.123730     0.192107     0.454045     0.578435     0.330948     0.111199
  46         0.173375    -0.093172     0.170494     0.465152     0.639160     0.299995     0.118334
  47         0.265885     0.023416    -0.092824     0.056527     0.340890     0.191722     0.094728
  48         0.130705     0.000037    -0.040560    -0.009456     0.123959     0.075859     0.027485
  49         0.060164     0.006935    -0.148871    -0.097098     0.080241     0.043561    -0.005376
  50         0.270293    -0.069961     0.083073     0.352335     0.659568     0.316905     0.136067
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TOTAL PRINCIPALS

CORRELATION MATRIX   ALL VARIABLES

	15	16	17	18	19	20	21
1	-0.045715	-0.106890	-0.129916	-0.120408	-0.102740	0.043698	-0.167354
2	0.059038	0.000095	0.004662	0.001869	-0.010638	0.029129	0.010833
3	-0.018418	0.158728	0.169311	0.184710	0.184041	0.079026	0.144323
4	0.039082	0.093495	0.128841	0.132695	0.145018	0.143675	0.092508
5	-0.059936	-0.047816	-0.099500	-0.106603	-0.077282	0.019725	-0.104781
6	0.028794	-0.007662	-0.051849	-0.080666	-0.059129	0.122047	-0.028019
7	0.037205	0.001785	0.028906	-0.016269	0.015135	0.120045	0.018195
8	0.044115	0.101875	0.044257	0.029650	0.049674	0.140017	0.061543
9	-0.002229	-0.174684	-0.117987	-0.145854	-0.134559	-0.098291	-0.154021
10	0.087042	0.276885	0.280243	0.257895	0.245963	0.128458	0.264449
11	0.154509	0.604785	0.567254	0.547143	0.532404	0.378247	0.551427
12	0.089456	0.414502	0.382539	0.349187	0.359530	0.398405	0.406003
13	0.578628	0.227453	0.168150	0.142382	0.154716	0.236443	0.197191
14	0.697097	0.103434	0.102019	0.110018	0.108317	0.086592	0.104438
15	1.000000	0.134277	0.121678	0.127625	0.123488	0.080782	0.109154
16	0.134277	1.000000	0.703624	0.683547	0.670430	0.473583	0.693602
17	0.121678	0.703624	1.000000	0.852179	0.802985	0.454307	0.707875
18	0.127625	0.683547	0.852179	1.000000	0.904948	0.427513	0.720827
19	0.123488	0.670430	0.802985	0.904948	1.000000	0.442957	0.709755
20	0.080782	0.473583	0.454307	0.427513	0.442957	1.000000	0.468250
21	0.109154	0.693602	0.707875	0.720827	0.709755	0.468250	1.000000
22	0.351293	0.032376	0.034204	0.031843	0.031843	0.023060	0.044170
23	0.120367	0.431831	0.355030	0.308273	0.323603	0.396980	0.384326
24	0.418600	0.146096	0.117741	0.110395	0.118009	0.116413	0.136659
25	0.059893	0.009604	0.008615	0.024444	-0.002416	-0.044145	0.017907
26	0.042873	0.007223	0.008683	0.027599	0.014445	-0.079384	0.005448
27	0.027712	0.090435	0.094199	0.090919	0.086858	0.054167	0.113743
28	0.017280	-0.072897	-0.044593	-0.041758	-0.041043	-0.067666	-0.049222
29	-0.021080	-0.030760	-0.033270	-0.017408	-0.010645	0.012603	0.017817
30	-0.054880	0.012504	0.000187	-0.001401	0.035350	-0.001440	-0.003930
31	-0.005155	0.009636	0.016539	0.032553	0.029579	0.038652	-0.005395
32	0.023780	-0.036785	0.006822	0.007272	0.002464	-0.040563	-0.096898
33	-0.027404	-0.063477	-0.012589	-0.006924	-0.024901	-0.099399	-0.117269
34	0.071388	0.378782	0.369173	0.391749	0.370246	0.261959	0.375838
35	0.119316	0.114455	0.131881	0.101422	0.105006	0.251174	0.130102
36	-0.002302	-0.347432	-0.280293	-0.272035	-0.284091	-0.160297	-0.293255
37	-0.001918	0.037903	0.049632	0.038876	0.035668	-0.025948	0.040390
38	-0.004475	-0.001347	-0.058844	-0.071021	-0.050579	0.085791	-0.040510
39	0.117673	-0.005807	0.006983	0.014899	0.008874	-0.015666	0.039395
40	0.083961	0.439673	0.301894	0.256506	0.276199	0.386842	0.369213
41	0.115262	0.457344	0.396659	0.363265	0.362589	0.349793	0.401712
42	0.006891	-0.110135	-0.113138	-0.139114	-0.136162	0.020732	-0.127311
43	0.036465	0.025030	-0.025550	-0.057379	-0.030982	0.141256	-0.001407
44	0.127625	0.179722	0.104156	0.080462	0.071159	0.181886	0.151735
45	0.112010	0.569094	0.511340	0.492861	0.505686	0.524931	0.582812
46	0.128146	0.540322	0.500600	0.479483	0.474687	0.438054	0.538150
47	0.039349	0.079758	0.027888	-0.007067	0.020823	0.177647	0.058060
48	0.018430	-0.002737	-0.026722	-0.019387	-0.022166	0.039505	-0.009859
49	-0.029214	-0.086721	-0.142839	-0.161207	-0.143791	-0.019890	-0.124116
50	0.148448	0.375815	0.349378	0.316709	0.327760	0.388943	0.394670

TOTAL PRINCIPALS

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CORRELATION MATRIX       ALL VARIABLES

                    15            16            17            18            19            20            21

     51        -0.122538     -0.134434     -0.126028     -0.136004     -0.112560     -0.056619     -0.166570
     52        -0.135246     -0.029061     -0.004019     -0.024095      0.023117      0.008293     -0.018964
     53         0.005456     -0.102495     -0.121106     -0.122297     -0.111521     -0.025543     -0.093215
     54         0.032962     -0.130382     -0.127224     -0.134042     -0.127742     -0.029596     -0.126554
     55         0.105125      0.269211      0.210067      0.203651      0.200667      0.183052      0.247076
     56         0.031450      0.080944      0.022536     -0.003601      0.027652      0.114962      0.064154
     57        -0.080204     -0.184308     -0.203811     -0.238473     -0.211964     -0.097762     -0.228068
     58         0.175986      0.738846      0.683937      0.656290      0.657563      0.541521      0.688372
     59         0.151482      0.519607      0.493861      0.501807      0.484035      0.331201      0.476340
     60         0.210018      0.220884      0.207743      0.172659      0.165281      0.181667      0.175549
     61         0.197859      0.183625      0.103048      0.091581      0.093229      0.159263      0.146393
     62         0.097820      0.092869      0.053061     -0.006639      0.005774      0.172953      0.056109
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TOTAL PRINCIPALS

CORRELATION MATRIX ALL VARIABLES

	22	23	24	25	26	27	28
1	-0.026359	0.209307	-0.004539	-0.123947	-0.085952	-0.072711	0.002911
2	-0.004325	0.049988	-0.019616	0.045771	0.047302	-0.047691	0.022893
3	-0.022727	0.135472	0.000543	-0.024303	-0.019931	0.036062	-0.038413
4	0.018222	0.192423	0.037945	-0.061833	-0.030711	0.013228	-0.009859
5	-0.009274	0.076253	-0.005851	-0.106896	-0.029562	-0.145593	0.004022
6	0.039523	0.289075	0.088390	-0.160265	-0.178962	-0.082877	-0.030657
7	0.067422	0.229230	0.095167	-0.172998	-0.215896	-0.019316	-0.069401
8	0.012700	0.220517	0.108042	-0.081730	-0.097958	-0.017135	-0.030557
9	0.050369	-0.046977	-0.050634	-0.021358	-0.011073	-0.014647	0.010600
10	0.080360	0.102500	0.083690	0.075194	0.065091	0.054405	-0.051999
11	0.085409	0.343764	0.177531	-0.014700	-0.040991	0.105411	-0.053526
12	0.060047	0.563920	0.156892	-0.054011	-0.084809	0.022529	-0.066952
13	0.373418	0.266524	0.451233	-0.005172	-0.039909	-0.028075	-0.024823
14	0.383103	0.150845	0.383200	0.019444	-0.022213	0.003514	0.032537
15	0.351293	0.120367	0.418600	0.059893	0.042873	0.027712	0.017280
16	0.032376	0.431831	0.146096	0.009604	0.007223	0.090435	-0.072897
17	0.034204	0.355030	0.117741	0.008615	0.008683	0.094199	-0.044593
18	0.031843	0.308273	0.110395	0.024444	0.027599	0.090919	-0.041758
19	0.031843	0.323603	0.118009	-0.002416	0.014445	0.086858	-0.041043
20	0.023060	0.396980	0.116413	-0.044145	-0.079384	0.054167	-0.067666
21	0.044170	0.384326	0.136659	0.017907	0.005448	0.113743	-0.049222
22	1.000000	0.065936	0.442998	0.029068	0.025042	-0.031390	-0.002301
23	0.065936	1.000000	0.205767	-0.005228	-0.040868	-0.015410	-0.087022
24	0.442998	0.205767	1.000000	0.027239	0.007878	-0.006742	-0.060789
25	0.029068	-0.005228	0.027239	1.000000	0.514975	-0.016562	-0.020036
26	0.025042	-0.040868	0.007878	0.514975	1.000000	0.008257	0.002931
27	-0.031390	-0.015410	-0.006742	-0.016562	0.008257	1.000000	0.028805
28	-0.002301	-0.087022	-0.060789	-0.020036	0.002931	0.028805	1.000000
29	0.010614	-0.050204	0.009085	0.002662	-0.011353	-0.077806	0.178391
30	-0.062074	0.037149	0.008066	-0.028965	-0.004455	0.044525	-0.052931
31	-0.002758	0.005334	0.000588	0.063043	0.047352	-0.010869	0.060874
32	0.042405	0.021469	-0.042800	-0.005386	0.013769	-0.092008	0.039703
33	0.046493	-0.112594	-0.066196	0.090571	0.123212	-0.034334	0.019996
34	0.071996	0.216914	0.080667	0.066031	0.068117	0.007823	-0.027108
35	0.130446	0.206961	0.153760	-0.030783	-0.056986	-0.035489	-0.058230
36	-0.024597	-0.097280	-0.026093	-0.035924	-0.111224	-0.041152	0.004753
37	0.007602	-0.031038	0.023376	-0.015236	-0.005805	0.011105	-0.022073
38	-0.011958	0.147396	0.050267	-0.031366	-0.059222	-0.053460	0.009800
39	0.077223	0.048581	0.045219	0.078115	0.056593	0.009771	-0.021898
40	0.060209	0.469349	0.162330	-0.094252	-0.070233	0.036316	-0.069373
41	0.071016	0.418160	0.125104	-0.077710	-0.047451	0.087946	-0.075946
42	0.037005	0.208904	0.037848	-0.085900	-0.108718	-0.037992	-0.012714
43	0.025168	0.278819	0.073946	-0.119013	-0.129159	-0.094722	-0.053542
44	0.068392	0.275908	0.130223	0.001988	-0.006098	-0.044361	-0.046833
45	0.053098	0.515514	0.201921	-0.005785	-0.027335	0.040585	-0.104956
46	0.055659	0.530329	0.171111	-0.012642	-0.072789	0.059268	-0.096056
47	0.038270	0.352164	0.100401	-0.116898	-0.129971	-0.093352	-0.026783
48	0.010578	0.070828	0.059363	-0.021613	-0.081618	-0.099492	-0.032031
49	-0.016604	0.038803	0.023961	-0.122524	-0.086284	-0.040419	0.040914
50	0.082027	0.583028	0.221748	-0.054059	-0.106700	-0.003154	-0.098765

TOTAL PRINCIPALS

CORRELATION MATRIX   ALL VARIABLES

	22	23	24	25	26	27	28
51	-0.037868	-0.091581	-0.086382	-0.121340	-0.056133	-0.005076	-0.001412
52	-0.077906	0.030028	-0.021931	-0.175465	-0.138359	0.041255	0.009319
53	-0.007553	0.098074	0.040744	-0.006673	-0.018238	-0.063414	-0.046749
54	0.019488	0.055781	0.046087	-0.004368	-0.020594	-0.088171	0.003920
55	-0.009436	0.215419	0.128921	0.054141	0.046780	-0.029780	-0.040107
56	-0.010543	0.231453	0.095361	-0.018799	-0.022870	-0.079406	0.007955
57	0.009328	-0.043364	-0.018152	-0.001869	-0.002548	-0.090622	0.045312
58	0.096805	0.513515	0.192454	-0.007485	-0.029548	0.093425	-0.125875
59	0.105228	0.258398	0.174160	0.034044	0.032328	0.079895	-0.051590
60	0.112999	0.169215	0.164528	0.051630	0.017469	0.003543	-0.028513
61	0.088665	0.209018	0.150091	0.046257	0.011200	0.018399	-0.068642
62	0.056594	0.336843	0.139342	-0.089804	-0.125804	-0.013953	-0.081989

TOTAL PRINCIPALS

CORRELATION MATRIX ALL VARIABLES

	29	30	31	32	33	34	35
1	-0.129940	0.059743	0.016671	0.063090	-0.003190	-0.062966	0.081331
2	-0.010646	0.003066	0.076529	0.028270	-0.006951	0.018064	-0.013549
3	0.020873	0.078938	-0.043641	0.004507	0.065263	0.058375	0.045978
4	-0.042365	0.102390	0.010140	-0.009135	0.002215	0.106101	0.102242
5	-0.047083	0.159676	-0.026917	0.033625	0.021485	-0.025683	0.091165
6	-0.009527	0.014372	0.008049	-0.022574	-0.152175	-0.014728	0.147124
7	-0.058819	0.055712	-0.017277	0.034623	-0.091503	0.000899	0.183512
8	-0.023497	0.042518	-0.035099	-0.018256	-0.094039	0.030472	0.144133
9	-0.090620	0.049765	0.037992	0.076981	0.043717	-0.028292	0.073951
10	0.068457	-0.040991	0.065698	0.028581	-0.012268	0.159868	0.048365
11	-0.033979	-0.026180	-0.005643	0.004899	-0.008202	0.272208	0.149689
12	-0.013068	0.032283	0.000899	-0.045045	-0.115447	0.193507	0.265528
13	-0.014246	-0.019370	0.016271	-0.071042	-0.072101	0.130416	0.296204
14	-0.017358	-0.027719	0.040352	0.010394	-0.017611	0.089159	0.152461
15	-0.021080	-0.054880	-0.005155	0.023780	-0.027404	0.071388	0.119316
16	-0.030760	0.012504	0.009636	-0.036785	-0.063477	0.378782	0.114455
17	-0.033270	0.000187	0.016539	0.006822	-0.012589	0.369173	0.131881
18	-0.017408	-0.001401	0.032553	0.007272	-0.006924	0.391749	0.101422
19	-0.010645	0.035350	0.029579	0.002464	-0.024901	0.370246	0.105006
20	0.012603	-0.001440	0.038652	-0.040563	-0.099399	0.261959	0.251174
21	0.017817	-0.003930	-0.005395	-0.096898	-0.117269	0.375838	0.130102
22	0.010615	-0.062074	-0.002758	0.042405	0.046493	0.071996	0.130446
23	-0.050204	0.037149	0.005334	0.021469	-0.112594	0.216914	0.206961
24	0.009085	0.008066	0.000588	-0.042800	-0.066196	0.080667	0.153760
25	0.002662	-0.028965	0.063043	-0.005386	0.090571	0.066031	-0.030783
26	-0.011353	-0.004455	0.047352	0.013769	0.123212	0.068117	-0.056986
27	-0.077806	0.044525	-0.010869	-0.092008	-0.034334	0.007823	-0.035489
28	0.178391	-0.052931	0.060874	0.039703	0.019996	-0.027108	-0.058230
29	1.000000	-0.044834	0.011331	-0.067121	0.060482	-0.046750	-0.013203
30	-0.044834	1.000000	-0.068575	0.016682	-0.002936	-0.031127	0.076754
31	0.011331	-0.068575	1.000000	0.029938	0.016950	0.034137	-0.002341
32	-0.067121	0.016682	0.029938	1.000000	0.330484	0.136076	0.012096
33	0.060482	-0.002936	0.016950	0.330484	1.000000	0.109518	-0.007125
34	-0.046750	-0.031127	0.034137	0.136076	0.109518	1.000000	0.112613
35	-0.013203	0.076754	-0.002341	0.012096	-0.007125	0.112613	1.000000
36	-0.050505	-0.095452	-0.008223	0.081958	-0.075307	-0.138926	-0.029808
37	0.092763	0.030112	-0.078326	-0.037287	-0.038410	-0.020038	-0.050485
38	-0.072254	0.041847	-0.007355	0.009380	-0.097547	-0.037412	0.047264
39	-0.006513	-0.045789	0.011466	-0.053332	-0.037787	0.045276	-0.001309
40	-0.143125	0.037446	-0.034879	-0.092646	-0.120057	0.183687	0.216431
41	0.001696	0.038243	0.008710	-0.037070	-0.037244	0.209408	0.175256
42	-0.098865	0.067320	-0.030530	0.044542	-0.040444	-0.069159	0.130433
43	-0.061738	0.104854	-0.055847	0.072360	-0.090949	0.011931	0.147744
44	-0.080394	0.000916	-0.001861	-0.043410	-0.019075	0.096795	0.150016
45	-0.053301	0.038922	0.009366	-0.147892	-0.173810	0.263137	0.244748
46	-0.081584	-0.006047	0.004995	-0.071560	-0.120584	0.285814	0.207339
47	-0.031449	0.084224	0.007037	0.032950	-0.071280	0.029246	0.166095
48	-0.070347	0.028347	-0.039233	0.016661	-0.102611	0.015141	0.083246
49	0.039143	0.081606	-0.024787	-0.017317	0.009548	-0.095816	0.025721
50	-0.043762	-0.024694	0.001475	-0.067935	-0.124695	0.159768	0.240302

TOTAL PRINCIPALS

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CORRELATION MATRIX       ALL VARIABLES

                    29              30              31              32              33              34              35

      51       -0.018689        0.126111       -0.032561        0.023713        0.065135       -0.094762        0.037341
      52       -0.011613        0.151928       -0.075411       -0.066876       -0.028285       -0.091812        0.081126
      53       -0.003868       -0.015034       -0.027945        0.004011       -0.079938       -0.052599        0.065414
      54        0.013536       -0.026830        0.017966        0.038128       -0.027306       -0.051730        0.052003
      55        0.017682       -0.082714        0.036838       -0.024998       -0.075799        0.090449        0.050908
      56        0.006570        0.052208       -0.015463       -0.047966       -0.096965       -0.006222        0.090403
      57        0.004043        0.028310        0.053338        0.040370        0.046789       -0.123040       -0.010607
      58        0.000598        0.012355       -0.007010       -0.028029       -0.066177        0.389246        0.221077
      59        0.001495       -0.028326        0.040784        0.003328       -0.033581        0.288251        0.121650
      60       -0.059293       -0.052757        0.019004       -0.031690        0.011463        0.148837        0.157073
      61       -0.069841       -0.045934        0.001847       -0.072423       -0.025173        0.112084        0.133571
      62       -0.115073        0.042147       -0.039193        0.027335       -0.070148        0.061513        0.279249
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TOTAL PRINCIPALS

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CORRELATION MATRIX       ALL VARIABLES

                 36          37          38          39          40          41          42

   1       0.178210   -0.025759    0.305547   -0.029706    0.213571    0.102651    0.366869
   2      -0.014109   -0.032445    0.059220    0.012347    0.030080    0.007974    0.059256
   3      -0.165166    0.014028    0.023704   -0.142028    0.132206    0.213905    0.066558
   4      -0.086252    0.016810    0.152156   -0.078666    0.192123    0.191565    0.140972
   5      -0.103893    0.018243    0.291530   -0.243732    0.132079    0.073341    0.256385
   6       0.204395   -0.073849    0.209610    0.203070    0.241030    0.107036    0.336342
   7       0.146504   -0.036582    0.129061    0.012078    0.260660    0.230034    0.247542
   8       0.042021   -0.085550    0.164523    0.044079    0.217484    0.222143    0.203521
   9       0.065289   -0.011402    0.029175    0.008786   -0.074331   -0.074338    0.077035
  10      -0.119632    0.006330   -0.184453   -0.011700    0.092959    0.167325   -0.173228
  11      -0.228092    0.037523   -0.018424    0.007433    0.351433    0.420926   -0.072234
  12      -0.077216   -0.038256    0.139002    0.009533    0.454499    0.443708    0.208096
  13      -0.084193   -0.038921    0.071913    0.097386    0.288940    0.202078    0.080054
  14      -0.018468   -0.025889    0.030636    0.064123    0.121007    0.141854    0.030033
  15      -0.002302   -0.001918   -0.004475    0.117673    0.083961    0.115262    0.006891
  16      -0.347432    0.037903   -0.001347   -0.005807    0.439673    0.457344   -0.110135
  17      -0.280293    0.049632   -0.058844    0.006983    0.301894    0.396659   -0.113138
  18      -0.272035    0.038876   -0.071021    0.014899    0.256506    0.363265   -0.139114
  19      -0.284091    0.035668   -0.050579    0.008874    0.276199    0.362589   -0.136162
  20      -0.160297   -0.025948    0.085791   -0.015666    0.386842    0.349793    0.020732
  21      -0.293255    0.040390   -0.040510    0.039395    0.369213    0.401712   -0.127311
  22      -0.024597    0.007602   -0.011958    0.077223    0.060209    0.071016    0.037005
  23      -0.097280   -0.031038    0.147396    0.048581    0.469349    0.418160    0.208904
  24      -0.026093    0.023376    0.050267    0.045219    0.162330    0.125104    0.037848
  25      -0.035924   -0.015236   -0.031366    0.078115   -0.094252   -0.077710   -0.085900
  26      -0.111224   -0.005805   -0.059222    0.056593   -0.070233   -0.047451   -0.108718
  27      -0.041152    0.011105   -0.053460    0.009771    0.036316    0.087946   -0.037992
  28       0.004753   -0.022073    0.009800   -0.021898   -0.069373   -0.075946   -0.012714
  29      -0.050505    0.092763   -0.072254   -0.006513   -0.143125    0.001696   -0.098865
  30      -0.095452    0.030112    0.041847   -0.045789    0.037446    0.038243    0.067320
  31      -0.008223   -0.078326   -0.007355    0.011466   -0.034879    0.008710   -0.030530
  32       0.081958   -0.037287    0.009380   -0.053332   -0.092646   -0.037070    0.044542
  33      -0.075307   -0.038410   -0.097547   -0.037787   -0.120057   -0.037244   -0.040444
  34      -0.138926   -0.020038   -0.037412    0.045276    0.183687    0.209408   -0.069159
  35      -0.029808   -0.050485    0.047264   -0.001309    0.216431    0.175256    0.130433
  36       1.000000   -0.087907    0.082867    0.093984   -0.182462   -0.213213    0.086002
  37      -0.087907    1.000000   -0.034108   -0.065408   -0.056214    0.014575   -0.010215
  38       0.082867   -0.034108    1.000000   -0.053425    0.154835    0.043108    0.207700
  39       0.093984   -0.065408   -0.053425    1.000000   -0.020930   -0.059667    0.030632
  40      -0.182462   -0.056214    0.154835   -0.020930    1.000000    0.569683    0.247631
  41      -0.213213    0.014575    0.043108   -0.059667    0.569683    1.000000    0.179125
  42       0.086002   -0.010215    0.207700    0.030632    0.247631    0.179125    1.000000
  43       0.052001   -0.028271    0.294980   -0.020403    0.287265    0.146070    0.376935
  44      -0.045565   -0.064974    0.074882    0.059117    0.240330    0.211965    0.131258
  45      -0.211098   -0.024181    0.107867    0.064691    0.540457    0.420254    0.072273
  46      -0.153034   -0.030657    0.057071    0.098930    0.507163    0.486426    0.100855
  47       0.006731   -0.030747    0.273351   -0.009108    0.393992    0.252011    0.382142
  48       0.113823   -0.085213    0.229447    0.090386    0.106540    0.021853    0.123655
  49       0.032624    0.043047    0.152504   -0.083131    0.096483    0.029846    0.199791
  50       0.109341   -0.058232    0.149407    0.155305    0.507703    0.444095    0.258340
```

TOTAL PRINCIPALS

CORRELATION MATRIX   ALL VARIABLES

	36	37	38	39	40	41	42
51	-0.089714	0.020762	-0.009772	-0.213248	-0.068994	-0.057441	0.008601
52	-0.105734	0.062999	0.015431	-0.207530	0.078651	0.071119	0.047932
53	0.116002	0.137304	0.074438	0.059164	0.005408	0.017270	0.184574
54	0.090068	0.147455	0.056230	0.039589	-0.049646	-0.021372	0.136093
55	-0.029197	0.007375	0.047534	0.096714	0.170808	0.148412	0.039644
56	-0.021642	0.013769	0.242943	0.008215	0.192391	0.158563	0.222368
57	0.058021	-0.032932	0.026699	-0.058922	-0.098040	-0.111223	0.054453
58	-0.269138	0.019774	0.039251	0.022203	0.496059	0.552969	-0.008471
59	-0.200464	-0.015660	-0.091879	0.072302	0.247370	0.281482	-0.190720
60	-0.030355	-0.038853	0.015788	0.028668	0.148118	0.133305	0.015422
61	-0.050919	-0.025860	0.071510	0.056492	0.198202	0.171200	[illegible]
62	0.048149	-0.015707	0.236166	0.018117	0.322435	0.269671	[illegible]

TOTAL PRINCIPALS

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CORRELATION MATRIX      ALL VARIABLES

                    43                  44                  45                  46                  47                  48                  49

   1          0.416553            0.091399           -0.013945            0.043866            0.403625            0.077834            0.223272
   2          0.075080            0.104318            0.058953            0.037740            0.033924            0.048333            0.001958
   3          0.008666            0.017202            0.096732            0.078883            0.107116           -0.028286            0.001884
   4          0.094441            0.030303            0.175237            0.103184            0.207720           -0.000665            0.075585
   5          0.277805            0.031192            0.035869           -0.036541            0.232004            0.209891            0.187320
   6          0.311243            0.190472            0.229762            0.188329            0.394652            0.169613            0.148652
   7          0.268220            0.070923            0.138041            0.182133            0.333092            0.056818            0.087560
   8          0.211028            0.143921            0.181341            0.173375            0.265885            0.130705            0.060164
   9          0.081289           -0.026894           -0.123730           -0.093172            0.023416            0.000037            0.006935
  10         -0.194866            0.017387            0.192107            0.170494           -0.092824           -0.040560           -0.148871
  11         -0.007909            0.123190            0.454045            0.465152            0.056527           -0.009456           -0.097098
  12          0.293586            0.236140            0.578435            0.639160            0.340890            0.123959            0.080241
  13          0.162281            0.219526            0.330948            0.299995            0.191722            0.075859            0.043561
  14          0.068635            0.116984            0.111199            0.118334            0.094728            0.027485           -0.005376
  15          0.036465            0.127625            0.112010            0.128146            0.039349            0.018430           -0.029214
  16          0.025030            0.179722            0.569094            0.540322            0.079758           -0.002737           -0.086721
  17         -0.025550            0.104156            0.511340            0.500600            0.027888           -0.026722           -0.142839
  18         -0.057379            0.080462            0.492861            0.479483           -0.007067           -0.019387           -0.161207
  19         -0.030982            0.071159            0.505686            0.474687            0.020823           -0.022166           -0.143791
  20          0.141256            0.181886            0.524931            0.438054            0.177647            0.039505           -0.019890
  21         -0.001407            0.151735            0.582812            0.538150            0.058060           -0.009859           -0.124116
  22          0.025168            0.068392            0.053098            0.055659            0.038270            0.010578           -0.016604
  23          0.278819            0.275908            0.515514            0.530329            0.352164            0.070828            0.038803
  24          0.073946            0.130223            0.201921            0.171111            0.100401            0.059363            0.023961
  25         -0.119013            0.001988           -0.005785           -0.012642           -0.116898           -0.021613           -0.122524
  26         -0.129159           -0.006098           -0.027335           -0.072789           -0.129971           -0.081618           -0.086284
  27         -0.094722           -0.044361            0.040585            0.059268           -0.093352           -0.099492           -0.040419
  28         -0.053542           -0.046833           -0.104956           -0.096056           -0.026783           -0.032031            0.040914
  29         -0.061738           -0.080394           -0.053301           -0.081584           -0.031449           -0.070347            0.039143
  30          0.104854            0.000916            0.038922           -0.006047            0.084224            0.028347            0.081606
  31         -0.055847           -0.001861            0.009366            0.004995            0.007037           -0.039233           -0.024787
  32          0.072360           -0.043410           -0.147892           -0.071560            0.032950            0.016661           -0.017317
  33         -0.090949           -0.019075           -0.173810           -0.120584           -0.071280           -0.102611            0.009548
  34          0.011931            0.096795            0.263137            0.285814            0.029246            0.015141           -0.095816
  35          0.147744            0.150016            0.244748            0.207339            0.166095            0.083246            0.025721
  36          0.052001           -0.045565           -0.211098           -0.153034            0.006731            0.113823            0.032624
  37         -0.028271           -0.064974           -0.024181           -0.030657           -0.030747           -0.085213            0.043047
  38          0.294980            0.074882            0.107867            0.057071            0.273351            0.229447            0.152504
  39         -0.020403            0.059117            0.064691            0.098930           -0.009108            0.090386           -0.083131
  40          0.287265            0.240330            0.540457            0.507163            0.393992            0.106540            0.096483
  41          0.146070            0.211965            0.420254            0.486426            0.252011            0.021853            0.029846
  42          0.376935            0.131258            0.072273            0.100855            0.382142            0.123655            0.199791
  43          1.000000            0.125368            0.189100            0.186295            0.415962            0.158943            0.147142
  44          0.125368            1.000000            0.307459            0.281132            0.199026            0.040575            0.035969
  45          0.189100            0.307459            1.000000            0.652756            0.335282            0.091619            0.011605
  46          0.186295            0.281132            0.652756            1.000000            0.244993            0.128178            0.002531
  47          0.415962            0.199026            0.335282            0.244993            1.000000            0.113698            0.131105
  48          0.158943            0.040575            0.091619            0.128178            0.113698            1.000000            0.026631
  49          0.147142            0.035969            0.011605            0.002531            0.131105            0.026631            1.000000
  50          0.248814            0.332295            0.679996            0.664808            0.400448            0.142953            0.055422
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TOTAL PRINCIPALS

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 CORRELATION MATRIX       ALL VARIABLES

                       43            44            45            46            47            48            49

     51          0.041265     -0.102236     -0.146869     -0.153316     -0.028124     -0.063255      0.110014
     52          0.104832     -0.121965     -0.031681     -0.030205      0.046997     -0.034961      0.151997
     53          0.168181      0.066885      0.006034      0.019412      0.146623      0.025454      0.076845
     54          0.124124      0.030067     -0.032687     -0.022148      0.116984      0.038134      0.056286
     55          0.084484      0.156686      0.289930      0.235676      0.110799     -0.001504     -0.005700
     56          0.243252      0.149199      0.215101      0.139761      0.304085      0.096479      0.123985
     57          0.057738      0.003237     -0.173583     -0.152084      0.022360     -0.088450      0.068971
     58          0.132209      0.218732      0.644066      0.634458      0.180991      0.026254     -0.055778
     59         -0.106794      0.121743      0.389104      0.418858     -0.036330     -0.006281     -0.161470
     60          0.056692      0.266992      0.226868      0.220344      0.063260      0.034996      0.011440
     61          0.106411      0.438638      0.236537      0.223957      0.136363      0.038639     -0.010335
     62          0.389436      0.240079      0.290484      0.265156      0.418158      0.094661      0.178752
```

TOTAL PRINCIPALS

CORRELATION MATRIX ALL VARIABLES

	50	51	52	53	54	55	56
1	0.216823	0.002922	0.060111	0.141016	0.119322	0.097305	0.350798
2	0.052347	-0.044449	-0.138158	0.021056	0.052627	0.084762	0.084506
3	0.087864	0.064240	0.145018	-0.000790	0.011694	0.046546	0.085139
4	0.163691	0.066974	0.121500	0.061785	0.059648	0.047860	0.171187
5	0.002082	0.242143	0.235141	0.045238	0.061561	-0.113829	0.195760
6	0.436741	-0.095077	-0.063268	0.257323	0.239396	0.185341	0.247086
7	0.295880	0.104699	0.268652	0.132767	0.068601	-0.031587	0.097693
8	0.270293	-0.048382	-0.008118	0.103174	0.123320	0.142621	0.270238
9	-0.069961	0.117624	0.064107	0.001957	0.007526	-0.157620	-0.051308
10	0.083073	-0.031371	-0.046879	-0.101988	-0.077961	0.037801	-0.168092
11	0.352335	-0.107220	0.012689	-0.096109	-0.135228	0.197454	0.063232
12	0.659568	-0.070858	0.053966	0.108448	0.072721	0.239886	0.237489
13	0.316905	-0.081594	-0.035447	0.013295	-0.030975	0.127087	0.086096
14	0.136067	-0.036330	-0.020467	-0.031124	-0.029556	0.023621	0.031970
15	0.148448	-0.122538	-0.135246	0.005456	0.032962	0.105125	0.031450
16	0.375815	-0.134434	-0.029061	-0.102495	-0.130382	0.269211	0.080944
17	0.349378	-0.126028	-0.004019	-0.121106	-0.127224	0.210067	0.022536
18	0.316709	-0.136004	-0.024095	-0.122297	-0.134042	0.203651	-0.003601
19	0.327760	-0.112560	0.023117	-0.111521	-0.127742	0.200667	0.027652
20	0.388943	-0.056619	0.008293	-0.025543	-0.029596	0.183052	0.114962
21	0.394670	-0.166570	-0.018964	-0.093215	-0.126554	0.247076	0.064154
22	0.082027	-0.037868	-0.077906	-0.007553	0.019488	-0.009436	-0.010543
23	0.583028	-0.091582	0.030028	0.098074	0.055781	0.215419	0.231453
24	0.221748	-0.086382	-0.021931	0.040744	0.046087	0.128921	0.095361
25	-0.054059	-0.121340	-0.175465	-0.006673	-0.004368	0.054141	-0.018799
26	-0.106700	-0.056133	-0.138359	-0.018238	-0.020594	0.046780	-0.022870
27	-0.003154	-0.005076	0.041255	-0.063414	-0.088171	-0.029780	-0.079406
28	-0.098765	-0.001412	0.009319	-0.046749	0.003920	-0.040107	0.007955
29	-0.043762	-0.018689	-0.011613	-0.003868	0.013536	0.017682	0.006570
30	-0.024694	0.126111	0.151928	-0.015034	-0.026830	-0.082714	0.052208
31	0.001475	-0.032561	-0.075411	-0.027945	0.017966	0.036838	-0.015463
32	-0.067935	0.023713	-0.066876	0.004011	0.038128	-0.024998	-0.047966
33	-0.124695	0.065135	-0.028285	-0.079938	-0.027306	-0.075799	-0.096965
34	0.159768	-0.094762	-0.091812	-0.052599	-0.051730	0.090449	-0.006222
35	0.240302	0.037341	0.081126	0.065414	0.052003	0.050908	0.090403
36	0.109341	-0.089715	-0.105734	0.116002	0.090068	-0.029197	-0.021642
37	-0.058232	0.020762	0.062999	0.137304	0.147455	0.007375	0.013769
38	0.149407	-0.009772	0.015431	0.074438	0.056230	0.047534	0.242943
39	0.155305	-0.213248	-0.207530	0.059164	0.039589	0.096714	0.008215
40	0.507703	-0.068994	0.078651	0.005408	-0.049646	0.170808	0.192391
41	0.444095	-0.057441	0.071119	0.017270	-0.021372	0.148412	0.158563
42	0.258340	0.008601	0.047932	0.184574	0.136093	0.039644	0.222368
43	0.248814	0.041265	0.104832	0.168181	0.124124	0.084484	0.243252
44	0.332295	-0.102236	-0.121965	0.066885	0.030067	0.156686	0.149199
45	0.679996	-0.146869	-0.031681	0.006034	-0.032687	0.289930	0.215101
46	0.664808	-0.153316	-0.030205	0.019412	-0.022148	0.235676	0.139761
47	0.400448	-0.028124	0.046997	0.146623	0.116984	0.110799	0.304085
48	0.142953	-0.063255	-0.034961	0.025454	0.038134	-0.001504	0.096479
49	0.055422	0.110014	0.151997	0.076845	0.056286	-0.005700	0.123985
50	1.000000	-0.214494	-0.073716	0.140105	0.094913	0.290338	0.244405

TOTAL PRINCIPALS

```
CORRELATION MATRIX      ALL VARIABLES

                     50            51            52            53            54            55            56

    51          -0.214494      1.000000      0.343222     -0.055200     -0.067129     -0.233685     -0.069211
    52          -0.073716      0.343222      1.000000     -0.003658     -0.076877     -0.202981     -0.058906
    53           0.140105     -0.055200     -0.003658      1.000000      0.626319      0.136806      0.221760
    54           0.094913     -0.067129     -0.076877      0.626319      1.000000      0.145592      0.210961
    55           0.290338     -0.233685     -0.202981      0.136806      0.145592      1.000000      0.194555
    56           0.244405     -0.069211     -0.058906      0.221760      0.210961      0.194555      1.000000
    57          -0.113709      0.099263      0.072108      0.068185      0.085094     -0.051898      0.053988
    58           0.504694     -0.135468     -0.035572     -0.047633     -0.082480      0.281896      0.132968
    59           0.278525     -0.114435     -0.128988     -0.134936     -0.131492      0.136562     -0.075097
    60           0.164522     -0.078317     -0.079700      0.040163      0.035023      0.173978      0.097277
    61           0.207950     -0.118946     -0.099571      0.082700      0.072885      0.211817      0.161761
    62           0.378790     -0.015663      0.077919      0.201591      0.147851      0.141296      0.249685
```

TOTAL PRINCIPALS

```
CORRELATION MATRIX      ALL VARIABLES

                        57             58             59             60             61             62

         1        0.063165      -0.016573      -0.299419      -0.008441       0.093418       0.331503
         2        0.025096       0.006910       0.000704       0.018451       0.046665       0.054127
         3       -0.073976       0.173660       0.039953       0.014675       0.054212       0.083883
         4       -0.082927       0.144171      -0.004605       0.061191       0.075087       0.158514
         5        0.077799      -0.033325      -0.163381      -0.054588      -0.005649       0.212597
         6        0.018127       0.089180      -0.119557       0.072305       0.150659       0.356529
         7       -0.034292       0.121347       0.003501       0.005594       0.050599       0.305778
         8       -0.036351       0.148018       0.021882       0.066305       0.134825       0.257504
         9        0.057358      -0.113622      -0.078273      -0.037814      -0.068622       0.022345
        10       -0.113928       0.242337       0.324705       0.076552       0.007640      -0.097837
        11       -0.202242       0.630304       0.479508       0.199774       0.155886       0.128335
        12       -0.071990       0.543927       0.260438       0.188619       0.195860       0.340712
        13       -0.036259       0.292650       0.139800       0.258579       0.256528       0.263013
        14       -0.066471       0.165995       0.129115       0.169380       0.167485       0.130916
        15       -0.080204       0.175986       0.151482       0.210018       0.197859       0.097820
        16       -0.184308       0.738846       0.519607       0.220884       0.183625       0.092869
        17       -0.203811       0.683937       0.493861       0.207743       0.103048       0.053061
        18       -0.238473       0.656290       0.501807       0.172659       0.091581      -0.006639
        19       -0.211964       0.657563       0.484035       0.165281       0.093229       0.005774
        20       -0.097762       0.541521       0.331201       0.181667       0.159263       0.172953
        21       -0.228068       0.688372       0.476340       0.175549       0.146393       0.056109
        22        0.009328       0.096805       0.105228       0.112999       0.088665       0.056594
        23       -0.043364       0.513515       0.258398       0.169215       0.209018       0.336843
        24       -0.018152       0.192454       0.174160       0.164528       0.150091       0.139342
        25       -0.001869      -0.007485       0.034044       0.051630       0.046257      -0.089804
        26       -0.002548      -0.029548       0.032328       0.017469       0.011200      -0.125804
        27       -0.090622       0.093425       0.079895       0.003543       0.018399      -0.013953
        28        0.045312      -0.125875      -0.051590      -0.028513      -0.068642      -0.081989
        29        0.004043       0.000598       0.001495      -0.059293      -0.069841      -0.115073
        30        0.028310       0.012355      -0.028326      -0.052757      -0.045934       0.042147
        31        0.053338      -0.007010       0.040784       0.019004       0.001847      -0.039193
        32        0.040370      -0.028029       0.003328      -0.031690      -0.072423       0.027335
        33        0.046789      -0.066177      -0.033581       0.011463      -0.025173      -0.070148
        34       -0.123040       0.389246       0.288251       0.148837       0.112084       0.061513
        35       -0.010607       0.221077       0.121650       0.157073       0.133571       0.279249
        36        0.058021      -0.269138      -0.200464      -0.030355      -0.050919       0.048149
        37       -0.032932       0.019774      -0.015660      -0.038853      -0.025860      -0.015707
        38        0.026699       0.039251      -0.091879       0.015788       0.071510       0.236166
        39       -0.058922       0.022203       0.072302       0.028668       0.056492       0.018117
        40       -0.098040       0.496059       0.247370       0.148118       0.198202       0.322435
        41       -0.111223       0.552969       0.281482       0.133305       0.171200       0.269671
        42        0.054453      -0.008471      -0.190720       0.015422       0.065969       0.405046
        43        0.057738       0.132209      -0.106794       0.056692       0.106411       0.389436
        44        0.003237       0.218732       0.121743       0.266992       0.438638       0.240079
        45       -0.173583       0.644066       0.389104       0.226868       0.236537       0.290484
        46       -0.152084       0.634458       0.418858       0.220344       0.223957       0.265156
        47        0.022360       0.180991      -0.036330       0.063260       0.136363       0.418158
        48       -0.088450       0.026254      -0.006281       0.034996       0.038639       0.094661
        49        0.068971      -0.055778      -0.161470       0.011440      -0.010335       0.178752
        50       -0.113709       0.504694       0.278525       0.164522       0.207950       0.378790
```

TOTAL PRINCIPALS

```
CORRELATION MATRIX      ALL VARIABLES

                  57           58           59           60           61           62

    51      0.099263    -0.135468    -0.114435    -0.078317    -0.118946    -0.015662
    52      0.072108    -0.035572    -0.128988    -0.079700    -0.099571     0.077919
    53      0.068185    -0.047633    -0.134936     0.040163     0.082700     0.201591
    54      0.085094    -0.082480    -0.131492     0.035023     0.072885     0.147851
    55     -0.051898     0.281896     0.136562     0.173978     0.211817     0.141296
    56      0.053988     0.132968    -0.075097     0.097277     0.161761     0.249685
    57      1.000000    -0.174423    -0.202839     0.002836    -0.011309     0.014695
    58     -0.174423     1.000000     0.544190     0.253855     0.240720     0.267625
    59     -0.202839     0.544190     1.000000     0.161722     0.097531    -0.035254
    60      0.002836     0.253855     0.161722     1.000000     0.668550     0.167396
    61     -0.011309     0.240720     0.097531     0.668550     1.000000     0.221500
    62      0.014695     0.267625    -0.035254     0.167396     0.221500     1.000000
```

ELEMENTARY PRINCIPALS

```
ALL VARIABLES

THE NUMBER OF OBSERVATIONS IS      57589.

VARIABLE        SUMS            SUMS OF SQUARES          MEAN           SIGMA(N)        SIGMA(N-1)
    1         166883.3555         706327.9063           2.8978           1.9666          1.9666
    2         174988.1152         537131.5313           3.0386           0.3067          0.3067
    3          48678.5908          48678.6440           0.8453           0.3616          0.3616
    4          31166.3215          31166.5425           0.5412           0.4983          0.4983
    5         158709.1914         452780.2344           2.7559           0.5170          0.5170
    6         184060.9941         801251.9922           3.1961           1.9231          1.9231
    7         194480.9375         750279.9141           3.3771           1.2742          1.2743
    8          25368.4546          25368.4575           0.4405           0.4964          0.4965
    9          14681.3420           6602.5821           0.2549           0.2228          0.2228
   10         338643.7820        2020789.3594           5.8804           0.7150          0.7150
   11         157810.6523        1000101.0391           2.7403           3.1396          3.1396
   12      0.13096849E 09      0.59855975E 12        2274.1962        2285.1028       2285.1226
   13          63669.9009         183155.2949           1.1056           1.3993          1.3993
   14         614745.8594       23577071.2500          10.6747          17.1888         17.1889
   15         554508.5078       20465068.2500           9.6287          16.2065         16.2067
   16           3310.8866           3310.8851           0.0575           0.2328          0.2328
   17           3345.4585           3345.4592           0.0581           0.2339          0.2339
   18           2099.1138           2099.1142           0.0364           0.1874          0.1874
   19           1285.2364           1285.2363           0.0223           0.1477          0.1477
   20           4424.4271           4424.4239           0.0768           0.2663          0.2663
   21            420.3155            420.3154           0.0073           0.0851          0.0851
   22         138689.0918        2918577.4688           2.4083           6.6992          6.6993
   23          88011.0928         202918.4629           1.5283           1.0899          1.0900
   24          65877.2734         529783.0313           1.1439           2.8091          2.8091
   25         448743.0117       20902623.7500           7.7922          17.3852         17.3853
   26         456358.1211       25373896.7500           7.9244          19.4373         19.4374
   27          88557.1748         225949.4434           1.5377           1.2485          1.2485
   28         227260.7184        1120914.3125           3.9463           1.9726          1.9726
   29         186242.1523         670630.0469           3.2340           1.0892          1.0892
   30          55054.7373          55054.7368           0.9560           0.2051          0.2051
   31         172962.4395       14538858.0000           3.0034          15.6025         15.6027
   32         143342.7773         435591.5430           2.4891           1.1697          1.1697
   33         258146.7656        1405165.3281           4.4826           2.0752          2.0752
   34          12580.8370          38556.3413           0.2185           0.7885          0.7885
   35          41784.0565          95657.0254           0.7256           1.0653          1.0653
   36        1528639.1719       42250756.0000          26.5440           5.3925          5.3926
   37         595547.6719       16440781.5000          10.3414          13.3619         13.3621
   38          73086.7012         141509.5723           1.2691           0.9201          0.9201
   39          10817.7592          20279.1836           0.1878           0.5629          0.5629
   40          45921.7251         127691.7363           0.7974           1.2576          1.2576
   41          93620.9180         282280.3789           1.6257           1.5029          1.5030
   42          49952.6743          91044.4580           0.8674           0.9102          0.9103
   43          94990.1826         227754.0879           1.6495           1.1109          1.1109
   44          15230.7583          23532.6350           0.2645           0.5820          0.5820
   45           6767.9493           8695.1752           0.1175           0.3704          0.3704
   46          14812.9801          10736.3812           0.2572           0.3468          0.3468
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ELEMENTARY PRINCIPALS

```
ALL VARIABLES


THE NUMBER OF OBSERVATIONS IS       57589.

VARIABLE          SUMS          SUMS OF SQUARES             MEAN              SIGMA(N)           SIGMA(N-1)
    47        19140.5735           11412.8944              0.3324              0.2962              0.2962
    48        25088.8276           19910.9717              0.4357              0.3949              0.3949
    49        25714.5195           25714.5220              0.4465              0.4971              0.4971
    50     24015531.0000       0.14964157E 11            417.0166            293.1580            293.1605
    51      5474195.5250       0.52082156E 09             95.0564              2.8390              2.8390
    52      4469462.0625       0.42086236E 09             77.6098             35.8427             35.8440
    53       397706.8203         5433553.8750              6.9060              6.8307              6.8308
    54       400448.3945         5576755.5625              6.9536              6.9631              6.9632
    55        91953.3662          388021.0078              1.5967              2.0465              2.0465
    56       204837.5605         1899783.0469              3.5569              4.5097              4.5097
    57        29198.7813           29198.8376              0.5070              0.5000              0.5000
    58       198497.1055         1192456.9688              3.4468              2.9415              2.9415
    59        43483.1846           51835.4731              0.7551              0.5744              0.5744
    60       116659.2002         1211136.3906              2.0257              4.1143              4.1143
    61       197194.3008         2371187.8438              3.4242              5.4267              5.4268
    62        94805.9746          295808.6914              1.6463              1.5577              1.5577
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ELEMENTARY PRINCIPALS

```
CORRELATION MATRIX       ALL VARIABLES

                      1              2              3              4              5              6              7

   1           1.000000       0.111752       0.086464       0.219959       0.315326       0.409710       0.226281
   2           0.111752       1.000000       0.026570       0.075252       0.052992       0.130485      -0.069077
   3           0.086464       0.026570       1.000000       0.555259       0.269985       0.084456       0.119458
   4           0.219959       0.075252       0.555259       1.000000       0.254469       0.228500       0.184277
   5           0.315326       0.052992       0.269985       0.254469       1.000000       0.105219       0.080648
   6           0.409710       0.130485       0.084456       0.228500       0.105219       1.000000       0.389223
   7           0.226281      -0.069077       0.119458       0.184277       0.080649       0.389223       1.000000
   8           0.270376       0.065272       0.061329       0.098525       0.142932       0.374592       0.280027
   9          -0.001623       0.003487       0.002031      -0.006557      -0.004149       0.051246       0.204696
  10          -0.364661      -0.025666       0.004248      -0.094836      -0.192161      -0.204586      -0.062016
  11           0.028245      -0.005075       0.056571      -0.007971      -0.035260      -0.010055       0.130394
  12           0.243413       0.052963       0.077891       0.055822       0.100300       0.311616       0.253545
  13           0.027869       0.042640       0.022882       0.065079       0.011863       0.105880       0.085423
  14          -0.020969       0.000687       0.009591       0.028002      -0.013120       0.012073       0.132402
  15          -0.040912       0.059744      -0.041328       0.014667      -0.063072       0.034898       0.055618
  16           0.040379       0.022525       0.046965       0.007886       0.030463       0.013575      -0.019090
  17           0.019686       0.026884       0.062271       0.095011      -0.000170       0.032686       0.076095
  18           0.053703       0.027255       0.039800       0.057453       0.044543       0.052445       0.008165
  19           0.064402      -0.002105       0.054467       0.074600       0.047679       0.064328       0.058373
  20           0.110358       0.040466       0.014105       0.003243       0.094231       0.076398       0.046816
  21          -0.040878      -0.010407       0.031692       0.008733      -0.009374      -0.019381       0.003126
  22          -0.023968      -0.003272      -0.006040       0.014779      -0.007652       0.052223       0.087453
  23           0.255264       0.053179       0.104071       0.114166       0.101107       0.279043       0.228928
  24           0.002296      -0.017183      -0.002411      -0.020586      -0.062017       0.071166       0.077516
  25          -0.134980       0.031319      -0.025113      -0.028560      -0.107648      -0.178360      -0.169899
  26          -0.087555       0.037680      -0.018060       0.031427      -0.035594      -0.175879      -0.212842
  27          -0.066798      -0.044279       0.005315       0.021855      -0.135691      -0.116080      -0.043935
  28          -0.002982       0.028693      -0.028127       0.002587      -0.028490      -0.001157      -0.053177
  29          -0.133834      -0.011958       0.034851      -0.048074      -0.048662      -0.004272      -0.061871
  30           0.032854       0.001865       0.105282       0.144721       0.138997      -0.020313       0.051737
  31           0.025033       0.095184      -0.053655      -0.008246      -0.007404       0.006846      -0.022480
  32           0.041021       0.024109       0.012741       0.062919       0.056923       0.089013       0.117068
  33           0.010784      -0.016613       0.122024       0.096092       0.087262      -0.093057      -0.049116
  34          -0.011454       0.020551       0.017201       0.086068       0.017583       0.034444      -0.012037
  35           0.078902      -0.023470       0.052226       0.067185       0.088577       0.082755       0.157605
  36           0.173491      -0.012919      -0.133559      -0.071893      -0.113381       0.266496       0.198218
  37          -0.025567      -0.031998      -0.004128       0.049226       0.010532      -0.027480      -0.006567
  38           0.318506       0.052243       0.064080       0.184371       0.299712       0.192845       0.146212
  39          -0.019313       0.025439      -0.207178      -0.096944      -0.257554       0.201417      -0.000555
  40           0.254390       0.036684       0.124685       0.165993       0.165927       0.142342       0.228417
  41           0.143304       0.013710       0.197928       0.171365       0.134502       0.078333       0.243214
  42           0.360466       0.066356       0.122342       0.204932       0.245513       0.329321       0.268233
  43           0.416513       0.080604       0.026721       0.099618       0.256410       0.295745       0.254700
  44           0.112951       0.084672       0.000455       0.010232       0.030287       0.103393       0.053425
  45           0.090292       0.086113      -0.002759       0.011246       0.052490       0.107098       0.016682
  46           0.143440       0.046700      -0.050468      -0.046450      -0.002685       0.121987       0.150251
  47           0.418937       0.035847       0.146903       0.250681       0.223417       0.368125       0.347962
  48           0.078604       0.049674      -0.035701      -0.054971       0.178475       0.134543       0.031118
  49           0.195415      -0.005238       0.028127       0.067080       0.158629       0.112998       0.063831
  50           0.302609       0.069058       0.050279       0.085069       0.002933       0.442225       0.349429
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ELEMENTARY PRINCIPALS

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CORRELATION MATRIX      ALL VARIABLES

                   1           2           3           4           5           6           7

   51      -0.031646   -0.065288    0.123838    0.083862    0.201876   -0.092721    0.100833
   52       0.039102   -0.150568    0.186889    0.094850    0.213673   -0.078762    0.242981
   53       0.120680    0.017982    0.013921    0.093132    0.040252    0.271428    0.153302
   54       0.100478    0.055791    0.038788    0.066762    0.047677    0.266781    0.078239
   55       0.149312    0.098924   -0.017502    0.023452   -0.090807    0.200270   -0.009730
   56       0.333519    0.081946    0.095205    0.138471    0.188457    0.219853    0.091934
   57       0.027525    0.020986   -0.001821   -0.005581    0.033874    0.015761   -0.052091
   58       0.133739    0.023004    0.102544    0.059353    0.070449    0.104066    0.124203
   59      -0.259804   -0.010240   -0.079891   -0.166139   -0.209055   -0.205907   -0.054250
   60       0.022301    0.021195    0.028907    0.036046   -0.083733    0.044044   -0.008555
   61       0.114951    0.043722    0.056982    0.030774   -0.022078    0.107705    0.045589
   62       0.329985    0.051695    0.142967    0.190139    0.183691    0.322496    0.307577
```

ELEMENTARY PRINCIPALS

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CORRELATION MATRIX       ALL VARIABLES

                 8            9           10           11           12           13           14

   1      0.270376    -0.001623    -0.364661     0.028245     0.243413     0.027869    -0.030969
   2      0.065272     0.003487    -0.025665    -0.005075     0.052983     0.042640     0.000687
   3      0.061329     0.002031     0.004248     0.056571     0.077891     0.022882     0.009591
   4      0.098325    -0.006557    -0.094835    -0.007971     0.055822     0.065079     0.028002
   5      0.142932    -0.004149    -0.192161    -0.035260     0.100300     0.011663    -0.013120
   6      0.374592     0.051243    -0.204586    -0.010055     0.311616     0.105880     0.012073
   7      0.280027     0.204696    -0.062015     0.130394     0.253545     0.085423     0.132402
   8      1.000000     0.033085    -0.163104     0.038704     0.254165     0.043849     0.032492
   9      0.033085     1.000000     0.051651    -0.016409     0.087703     0.026138     0.125003
  10     -0.163104     0.051651     1.000000     0.055811    -0.065849    -0.005205     0.114709
  11      0.038704    -0.016409     0.055812     1.000000     0.099986     0.106800     0.118924
  12      0.254165     0.087703    -0.065849     0.099986     1.000000     0.088064     0.048799
  13      0.043849     0.026138    -0.005205     0.106800     0.086064     1.000000     0.620370
  14      0.032492     0.125003     0.114709     0.118924     0.048799     0.620370     1.000000
  15      0.029930     0.035543     0.090616     0.114194     0.026952     0.595282     0.733548
  16      0.068740    -0.045707     0.051423     0.203387     0.067397     0.044116     0.004970
  17      0.011259     0.044968     0.050141     0.197286     0.098085     0.036806     0.023202
  18      0.017901     0.006389     0.018166     0.117992     0.056096     0.039648     0.046338
  19      0.040589     0.024785     0.016223     0.111802     0.022579     0.028925     0.019153
  20      0.063275    -0.029829    -0.065455     0.091032     0.093379     0.024067    -0.006655
  21     -0.023288    -0.007237     0.131591     0.103608    -0.032055    -0.000797    -0.025385
  22     -0.016491     0.083324     0.099395     0.100783     0.040369     0.391739     0.410664
  23      0.180996     0.060870    -0.042321     0.101274     0.415913     0.084517     0.097457
  24      0.027890    -0.002832     0.072146     0.118715     0.066831     0.436271     0.417010
  25     -0.028287    -0.016356     0.111693    -0.014644    -0.031068    -0.006943     0.034829
  26     -0.094900    -0.033032     0.096473    -0.067118    -0.078378    -0.020053    -0.014103
  27     -0.038249     0.016546     0.036458     0.043318    -0.068999    -0.076643    -0.012467
  28     -0.006354    -0.018388    -0.033602    -0.006906    -0.017089     0.019692     0.050709
  29     -0.006366    -0.104361     0.065419    -0.038370     0.004731    -0.002584    -0.009262
  30      0.016936     0.051378    -0.050561    -0.032149     0.007307    -0.048335    -0.035839
  31     -0.026153     0.008251     0.070301    -0.027196     0.010914     0.004996     0.020560
  32      0.040533     0.069996     0.055228     0.141604     0.099275     0.014937     0.049865
  33     -0.041214    -0.011578    -0.001491     0.164682     0.047148     0.037670     0.019702
  34      0.018341     0.074199     0.042173     0.051538     0.045286     0.051049     0.055462
  35      0.085264     0.127858     0.010806     0.093429     0.180854     0.240381     0.147180
  36      0.119310     0.004351    -0.019634    -0.002201     0.103997    -0.029664     0.020885
  37     -0.065498    -0.009709    -0.009632     0.018797    -0.021497    -0.010402     0.005709
  38      0.157163     0.021693    -0.233596    -0.003574     0.112342     0.033502     0.018094
  39      0.032718     0.004717     0.024614     0.004680    -0.031784     0.114834     0.074616
  40      0.164570     0.017925    -0.049578     0.146061     0.192703     0.115614     0.091721
  41      0.195034     0.008850     0.066650     0.218295     0.284378     0.048580     0.113353
  42      0.222805     0.053055    -0.174211     0.031450     0.289582     0.074784     0.041563
  43      0.193050     0.081477    -0.252586     0.018055     0.289531     0.088100     0.043889
  44      0.080021     0.011896    -0.028550     0.032649     0.132116     0.108610     0.107167
  45      0.038511    -0.015299    -0.020769     0.095617     0.169842     0.120140     0.026932
  46      0.122411     0.013241    -0.005699     0.186774     0.521213     0.131048     0.067256
  47      0.238775     0.034498    -0.170597     0.046326     0.262726     0.124413     0.073800
  48      0.111147     0.004867    -0.033631     0.000162     0.096923     0.018045     0.033927
  49      0.062230    -0.015946    -0.154891    -0.037865     0.135530     0.029537    -0.017257
  50      0.269737     0.020584    -0.064538     0.144295     0.529505     0.159437     0.125029
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ELEMENTARY PRINCIPALS

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CORRELATION MATRIX       ALL VARIABLES
                    8              9             10             11             12             13             14

 51          -0.047238       0.078509      -0.008971      -0.003446      -0.009120      -0.045555      -0.029269
 52          -0.028074       0.072182      -0.055593       0.049551       0.047711      -0.071747      -0.037083
 53           0.134522      -0.013942      -0.060541      -0.026951       0.213137       0.031059      -0.011602
 54           0.158518      -0.014276      -0.031069      -0.065695       0.201086       0.005232       0.004494
 55           0.136843      -0.119439      -0.045638       0.044097       0.130959       0.048659      -0.024683
 56           0.260573      -0.043372      -0.217508       0.034270       0.180857       0.017569      -0.009952
 57          -0.035802      -0.022267      -0.050686      -0.057466       0.089204       0.023058      -0.046498
 58           0.098956       0.044106      -0.016422       0.302512       0.300804       0.131469       0.135173
 59          -0.059633       0.042806       0.241873       0.189308      -0.030587       0.001982       0.094466
 60           0.033057       0.000285      -0.009090       0.095493       0.060155       0.199685       0.157124
 61           0.092204      -0.033387      -0.047899       0.089592       0.069891       0.183097       0.150547
 62           0.232792       0.039137      -0.158256       0.148068       0.298071       0.182024       0.116152
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10

ELEMENTARY PRINCIPALS

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CORRELATION MATRIX      ALL VARIABLES

                  15            16            17            18            19            20            21

     1     -0.040912      0.040379      0.019685      0.053703      0.064402      0.110358     -0.040878
     2      0.059744      0.022525      0.026884      0.027255     -0.002105      0.040466     -0.010407
     3     -0.041328      0.045965      0.062271      0.039800      0.054467      0.014105      0.031692
     4      0.014667      0.007886      0.095011      0.057453      0.074600      0.008243      0.008733
     5     -0.063072      0.030461     -0.000170      0.044543      0.047679      0.094231     -0.009374
     6      0.034898      0.013575      0.032686      0.052445      0.064328      0.076398     -0.019381
     7      0.055618     -0.019090      0.076095      0.008165      0.058373      0.046816      0.003126
     8      0.029930      0.063740      0.011258      0.017901      0.040689      0.063275     -0.023288
     9      0.035543     -0.045707      0.044968      0.006389      0.024785     -0.029829     -0.007237
    10      0.090616      0.051423      0.050141      0.018166      0.016223     -0.065455      0.131591
    11      0.114194      0.208387      0.197286      0.117992      0.111802      0.091032      0.103608
    12      0.026952      0.067397      0.088085      0.056096      0.022579      0.093379     -0.032055
    13      0.595282      0.044116      0.036806      0.039648      0.028925      0.024067     -0.000797
    14      0.723548      0.004970      0.025202      0.046338      0.019153     -0.006655     -0.025385
    15      1.000000      0.040264      0.030080      0.032854      0.025126     -0.035133     -0.017082
    16      0.040264      1.000000      0.214105      0.188446      0.176263      0.105848      0.225416
    17      0.030080      0.214105      1.000000      0.631203      0.591405      0.155514      0.221120
    18      0.032854      0.188446      0.631203      1.000000      0.714184      0.192800      0.172416
    19      0.025126      0.176263      0.591405      0.714184      1.000000      0.180899      0.228013
    20     -0.035133      0.105848      0.155514      0.192800      0.180899      1.000000      0.149475
    21     -0.017082      0.225416      0.221120      0.172416      0.228013      0.149475      1.000000
    22      0.558305      0.009585      0.024329      0.010406     -0.006694     -0.024193     -0.008363
    23      0.082733      0.119501      0.105182      0.057265      0.049308      0.107373      0.039907
    24      0.460143      0.021965      0.027726     -0.006082     -0.009744      0.004766     -0.009720
    25      0.012574      0.054968     -0.003766      0.037114     -0.009277     -0.006416      0.004507
    26      0.063103      0.038300     -0.034109     -0.010743     -0.032409     -0.059072      0.000121
    27      0.017424     -0.008112     -0.005708     -0.034195     -0.029319     -0.019034     -0.023220
    28      0.020642     -0.008518     -0.005945     -0.010783     -0.008084      0.000605      0.011135
    29     -0.006588     -0.047842     -0.059625     -0.046572     -0.032456      0.042844      0.022802
    30     -0.040355      0.007470      0.020540      0.037401      0.032031     -0.037805      0.011724
    31     -0.013706     -0.004113     -0.032911     -0.004843     -0.024788      0.087398     -0.014619
    32      0.047214      0.058414      0.094921      0.076728      0.072675      0.102021     -0.002434
    33     -0.005722      0.118834      0.107549      0.076859      0.048695      0.036822      0.082790
    34      0.020426      0.117645      0.075227      0.111322      0.095042      0.083956      0.186239
    35      0.113464      0.012568      0.079663      0.077018      0.052769      0.153394      0.025738
    36      0.030750     -0.130672     -0.026058      0.011036      0.008227      0.034576     -0.034925
    37      0.023996     -0.016237     -0.014463     -0.005262     -0.033855     -0.022323      0.014370
    38      0.005607      0.042023     -0.009896      0.005587      0.013631      0.099367     -0.084776
    39      0.125885      0.025122      0.001302     -0.015007     -0.024761     -0.025289      0.044212
    40      0.019512      0.198116      0.046938      0.029098      0.036261      0.041214      0.018731
    41      0.059299      0.156555      0.099707      0.039720      0.040246      0.070477      0.012640
    42      0.023479      0.034673      0.030680      0.026276      0.017762      0.063816     -0.039818
    43      0.023329      0.058031      0.036220      0.056441      0.060099      0.099166     -0.045723
    44      0.086950      0.082292      0.025857      0.044129      0.031557      0.032444      0.059284
    45      0.022515      0.205229      0.118180      0.126970      0.121674      0.137172      0.115200
    46      0.057273      0.154481      0.121964      0.099933      0.044625      0.038009      0.049041
    47      0.048720      0.032267      0.031590      0.018554      0.035220      0.087101     -0.028099
    48      0.000705      0.001813     -0.016601      0.022707     -0.024512     -0.002729     -0.023520
    49     -0.033471     -0.026241     -0.038673     -0.069378     -0.062849      0.024808     -0.037746
    50      0.131972      0.072104      0.071648      0.022723      0.025707      0.052601     -0.007347
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ELEMENTARY PRINCIPALS

CORRELATION MATRIX       ALL VARIABLES

                15          16          17          18          19          20          21

  51      -0.108775   -0.015084    0.029376    0.001452    0.002409    0.055685   -0.015089
  52      -0.129209   -0.040049    0.058213    0.022502    0.056598    0.039477   -0.006445
  53       0.028681   -0.005213   -0.017121    0.007694    0.006154    0.037200   -0.024701
  54       0.069535   -0.020123   -0.018504   -0.015169   -0.026751    0.043713   -0.026622
  55       0.065220    0.132656    0.030355    0.026102    0.046988    0.078307    0.042810
  56       0.017797    0.069676    0.010133   -0.021844    0.018365    0.071641   -0.002656
  57      -0.052101    0.028775    0.013434   -0.006174    0.012012    0.026564   -0.026753
  58       0.134635    0.266947    0.254564    0.169310    0.173574    0.212676    0.137342
  59       0.109633    0.123705    0.111638    0.089941    0.053346   -0.010194    0.076790
  60       0.199587    0.096973    0.082070    0.057212    0.039412    0.040162    0.002438
  61       0.174723    0.113358    0.021396    0.022476    0.023117    0.065499   -0.000244
  62       0.079100    0.071284    0.078704    0.056233    0.055848    0.064887    0.005146
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ELEMENTARY PRINCIPALS

```
CORRELATION MATRIX      ALL VARIABLES

                22           23           24           25           26           27           28

  1      -0.023968     0.255264     0.002296    -0.134980    -0.087855    -0.066798    -0.00298
  2      -0.003272     0.053179    -0.017183     0.031319     0.037680    -0.044279     0.02869
  3      -0.006040     0.104071    -0.002411    -0.025113    -0.018060     0.005315    -0.02812
  4       0.014779     0.114166    -0.020586    -0.028560     0.031427     0.021855     0.00258
  5      -0.007652     0.101107    -0.062017    -0.107648    -0.035394    -0.135691    -0.02849
  6       0.092223     0.279043     0.071166    -0.178360    -0.175879    -0.116080    -0.00115
  7       0.087453     0.228928     0.077515    -0.169899    -0.212842    -0.043935    -0.05317
  8      -0.016491     0.180996     0.027890    -0.088257    -0.094900    -0.038249    -0.00665
  9       0.083374     0.060870    -0.002832    -0.016356    -0.033032     0.016546    -0.01838
 10       0.099395    -0.042322     0.072146     0.111693     0.096473     0.036458    -0.03360
 11       0.100783     0.101274     0.118715    -0.014644    -0.067118     0.043318    -0.00690
 12       0.040369     0.415911     0.066831    -0.051068    -0.078378    -0.068999    -0.01708
 13       0.391739     0.084517     0.436271    -0.006943    -0.020053    -0.076643     0.01969
 14       0.410684     0.097457     0.417010     0.034829    -0.014103    -0.012467     0.05070
 15       0.368305     0.082731     0.460143     0.082574     0.063103     0.017424     0.02064
 16       0.009385     0.119501     0.021968     0.054968     0.038300    -0.008112    -0.00851
 17       0.024329     0.105182     0.027726    -0.003766    -0.034109    -0.005708    -0.00594
 18       0.010406     0.057265    -0.006082     0.037114    -0.010743    -0.034195    -0.01078
 19      -0.006894     0.049308    -0.009744    -0.009277    -0.032409    -0.029319    -0.00808
 20      -0.024193     0.107373     0.004766    -0.006416    -0.059072    -0.019034     0.000605
 21      -0.008363     0.039907    -0.009720     0.004507     0.000121    -0.023220     0.01113
 22       1.000000     0.070464     0.434533     0.021013     0.033456    -0.055380    -0.03827
 23       0.070464     1.000000     0.121042     0.015648    -0.025564    -0.111855    -0.02739
 24       0.434533     0.121042     1.000000     0.069776     0.053897    -0.033136    -0.01949
 25       0.021013     0.015648     0.069776     1.000000     0.491707     0.019173    -0.01871
 26       0.033456    -0.025564     0.053897     0.491707     1.000000     0.056062    -0.02266
 27      -0.055380    -0.111855    -0.033136     0.019173     0.056062     1.000000     0.01419
 28      -0.038272    -0.027396    -0.019497    -0.018717    -0.022663     0.014192     1.000000
 29       0.014981    -0.023529     0.020247     0.006714    -0.019524    -0.086488     0.175437
 30      -0.046151     0.023047    -0.022771    -0.001906     0.000758     0.056107    -0.059631
 31      -0.010556     0.011544     0.010111     0.093205     0.073863    -0.045993     0.07953
 32       0.052197     0.177824     0.009597    -0.035016    -0.025655    -0.080152     0.03482
 33       0.050089     0.011869    -0.011949     0.066840     0.085985    -0.001218    -0.01540
 34       0.040363     0.064815     0.039355     0.045290     0.061315    -0.052219    -0.00622
 35       0.121721     0.101329     0.124502    -0.048064    -0.047003    -0.069053    -0.02882
 36      -0.026602     0.092990     0.050067    -0.060928    -0.122467    -0.022401    -0.02635
 37       0.040247    -0.021674     0.069889    -0.007072    -0.020883     0.016061    -0.03812
 38      -0.038584     0.140987     0.025718    -0.046433    -0.073929    -0.044731     0.00783
 39       0.100684     0.070749     0.060074     0.082642     0.084560     0.000036    -0.00668
 40       0.042925     0.210370     0.029810    -0.084330    -0.044447     0.000422    -0.02312
 41       0.074386     0.245007     0.038151    -0.093943    -0.058634     0.043892    -0.056021
 42       0.041665     0.299795     0.034875    -0.093599    -0.121075     0.007880    -0.01926
 43      -0.001351     0.267952     0.009324    -0.128771    -0.135811    -0.092744    -0.04259
 44       0.055187     0.181092     0.072179    -0.010364     0.001037    -0.079645    -0.02402
 45       0.038543     0.143177     0.023083     0.068551     0.073572    -0.023817    -0.05352
 46       0.043551     0.339329     0.061351    -0.011757    -0.050682    -0.061149    -0.04712
 47       0.008356     0.312933     0.041999    -0.121518    -0.124338    -0.082070    -0.01419
 48       0.006507     0.033997     0.015940    -0.015943    -0.071062    -0.118998    -0.00924
 49      -0.017098     0.077409     0.022840    -0.120820    -0.089305    -0.046849     0.05427
 50       0.038287     0.496845     0.152271    -0.073473    -0.108668    -0.087022    -0.05582
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ELEMENTARY PRINCIPALS

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CORRELATION MATRIX       ALL VARIABLES

                   22             23             24             25             26             27             28

    51        -0.017344      -0.062171      -0.078002      -0.097819      -0.049750      -0.012340      -0.028981
    52        -0.098370      -0.022241      -0.073878      -0.145506      -0.144459       0.025504      -0.005868
    53        -0.002895       0.159738       0.044383      -0.040858      -0.043516      -0.065911      -0.018986
    54         0.037126       0.155457       0.084932      -0.013490      -0.029845      -0.086140       0.026966
    55        -0.024987       0.136252       0.114722       0.053573       0.056587      -0.095879      -0.004565
    56        -0.049036       0.171294       0.017450      -0.036570      -0.013280      -0.072814       0.027831
    57         0.032093       0.057638       0.023452      -0.009708      -0.012503      -0.091983       0.033719
    58         0.114415       0.277592       0.080967       0.025069      -0.007659       0.014310      -0.095064
    59         0.113677       0.005799       0.124773       0.068693       0.094616       0.034662      -0.030913
    60         0.072441       0.056680       0.131542       0.019816       0.005109      -0.029598      -0.036483
    61         0.050814       0.100247       0.095785       0.014508       0.003959      -0.011445      -0.055798
    62         0.034917       0.288154       0.054221      -0.091679      -0.124789      -0.011758      -0.074057
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ELEMENTARY PRINCIPALS

CORRELATION MATRIX   ALL VARIABLES

	29	30	31	32	33	34	35
1	-0.133834	0.032854	0.025033	0.061021	0.010784	-0.011954	0.078902
2	-0.011958	0.001865	0.096184	0.024109	-0.016618	0.020551	-0.023470
3	0.034850	0.105282	-0.053655	0.012741	0.122024	0.017201	0.052226
4	-0.048074	0.144721	-0.008246	0.062919	0.096092	0.086068	0.067185
5	-0.048662	0.138997	-0.007404	0.056922	0.087261	0.017583	0.088577
6	-0.004273	-0.020313	0.006845	0.088013	-0.093057	0.034444	0.082755
7	-0.061870	0.051737	-0.022480	0.117068	-0.049116	-0.012037	0.157605
8	-0.006366	0.016936	-0.026153	0.040533	-0.041214	0.018341	0.085264
9	-0.104361	0.051378	0.008251	0.069996	-0.011579	0.074199	0.127858
10	0.065419	-0.030561	0.070301	0.053228	-0.001491	0.042173	0.010806
11	-0.038370	-0.032149	-0.027196	0.141604	0.164682	0.051538	0.093429
12	0.004731	0.007307	0.010914	0.099275	0.047148	0.045286	0.180854
13	-0.002584	-0.048335	0.004996	0.014937	0.037670	0.051049	0.240381
14	-0.009262	-0.035839	0.020560	0.049865	0.019702	0.055462	0.147180
15	-0.006888	-0.040355	-0.013706	0.047214	-0.005722	0.020426	0.113464
16	-0.047842	0.007470	-0.004113	0.058414	0.118834	0.117646	0.012568
17	-0.069625	0.020540	-0.032911	0.094921	0.107549	0.075227	0.079663
18	-0.046572	0.037401	-0.004843	0.076728	0.076859	0.111322	0.077018
19	-0.032456	0.032031	-0.024788	0.072675	0.048695	0.095042	0.052769
20	0.042844	-0.037805	0.087398	0.102021	0.036822	0.083956	0.153394
21	0.022802	0.011724	-0.014619	-0.002434	0.082790	0.186239	0.025738
22	0.014981	-0.045151	-0.010556	0.062137	0.050689	0.040563	0.121721
23	-0.023529	0.023047	0.011544	0.177824	0.011869	0.064815	0.101329
24	0.020247	-0.022771	0.010111	0.009597	-0.011949	0.039355	0.124502
25	0.005714	-0.001906	0.093205	-0.035016	0.066840	0.045290	-0.048064
26	-0.019324	0.000758	0.073553	-0.025655	0.085985	0.061315	-0.047003
27	-0.086488	0.056107	-0.045993	-0.080152	-0.001218	-0.052219	-0.069053
28	0.175437	-0.059631	0.079532	0.034826	-0.015403	-0.006220	-0.028822
29	1.000000	-0.043338	0.015351	-0.063456	0.045201	-0.064546	0.000943
30	-0.043338	1.000000	-0.082369	0.033166	0.023914	-0.010772	0.072340
31	0.015351	-0.082369	1.000000	0.054599	0.004351	0.049332	0.000931
32	-0.063456	0.033166	0.054599	1.000000	0.189952	0.131817	0.097068
33	0.045201	0.023914	0.004351	0.189952	1.000000	0.110923	0.082804
34	-0.064546	-0.010772	0.049332	0.131817	0.110923	1.000000	0.094602
35	0.000943	0.072340	0.000931	0.097068	0.082804	0.094602	1.000000
36	-0.056162	-0.071832	-0.000347	0.074034	-0.187928	-0.001354	0.017033
37	0.078575	0.043349	-0.079888	-0.058526	-0.066829	-0.064027	-0.022612
38	-0.067759	0.014697	-0.003230	0.065908	-0.084522	-0.014577	0.035303
39	-0.014492	-0.033187	0.014275	-0.031614	-0.041232	0.050764	-0.017019
40	-0.149594	0.039981	-0.035139	0.031575	0.029625	0.058131	0.093428
41	-0.003982	0.049408	0.008392	0.057668	0.100844	0.028098	0.110460
42	-0.112283	0.055469	-0.024865	0.077344	-0.043438	0.004985	0.127392
43	-0.063021	0.078568	-0.039059	0.137001	-0.051351	0.044070	0.102369
44	-0.033385	-0.023698	-0.002854	0.047265	0.042904	0.075501	0.107308
45	-0.056342	0.011597	0.025236	0.002352	0.081444	0.159669	0.097195
46	-0.094361	-0.015466	-0.007209	0.104861	0.043745	0.093899	0.065786
47	-0.023818	0.044770	0.017013	0.134988	-0.018937	0.035557	0.098264
48	-0.059524	0.011609	-0.033854	0.067614	-0.085075	0.030531	0.032288
49	0.033965	0.069124	-0.028500	-0.003102	0.017733	-0.064746	0.008726
50	-0.027962	-0.043073	0.017800	0.095380	0.013455	0.014812	0.125091

ELEMENTARY PRINCIPALS

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CORRELATION MATRIX       ALL VARIABLES

                   29             30             31             32             33             34             35

   51       -0.000268       0.115437      -0.052183       0.011747       0.095430      -0.038430       0.073118
   52       -0.011139       0.133694      -0.074187      -0.057218       0.038235      -0.096607       0.089185
   53        0.004666      -0.018211      -0.021978       0.035795      -0.096165      -0.020815       0.078091
   54        0.019041      -0.025372       0.026440       0.052490      -0.078633       0.003653       0.079561
   55        0.005271      -0.090216       0.030808       0.029921      -0.048405       0.014000      -0.015991
   56        0.005319       0.024262       0.013297       0.026168      -0.038705      -0.021173       0.023703
   57        0.017613      -0.000291       0.053296       0.008545       0.042143      -0.023205       0.014295
   58        0.003521       0.023488      -0.031292       0.144969       0.145340       0.157941       0.150167
   59       -0.025028      -0.047460       0.020290       0.121253       0.070561       0.119350       0.051369
   60       -0.065221      -0.071223      -0.031367       0.020750       0.053726       0.082276       0.073816
   61       -0.078223      -0.060844      -0.013467      -0.018732       0.041816       0.067502       0.074097
   62       -0.118716       0.020829      -0.021810       0.092848       0.003692       0.058231       0.218747
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ELEMENTARY PRINCIPALS

CORRELATION MATRIX ALL VARIABLES

	36	37	38	39	40	41	42
1	0.173491	-0.023667	0.318506	-0.019313	0.254590	0.143804	0.360466
2	-0.012919	-0.031998	0.052243	0.025439	0.036684	0.013716	0.066356
3	-0.133559	-0.004128	0.064080	-0.207178	0.124685	0.197928	0.122342
4	-0.071593	0.049226	0.184371	-0.096944	0.166993	0.171365	0.204932
5	-0.113381	0.010532	0.299712	-0.257554	0.165927	0.134502	0.245513
6	0.266496	-0.027480	0.192845	0.201417	0.142342	0.078333	0.329321
7	0.198218	-0.006567	0.146212	-0.000555	0.228417	0.243214	0.268233
8	0.119310	-0.065898	0.167163	0.052718	0.164570	0.195084	0.222805
9	0.004351	-0.009709	0.021693	0.004717	0.017928	0.008850	0.053055
10	-0.019634	-0.000632	-0.233595	0.024614	-0.049578	0.066650	-0.174211
11	-0.002200	0.018797	-0.003574	0.004680	0.146061	0.218295	0.031450
12	0.103997	-0.021497	0.112342	-0.031784	0.192703	0.284378	0.289582
13	-0.029364	-0.010402	0.033502	0.114834	0.115614	0.048580	0.074764
14	0.020865	0.005709	0.018094	0.074516	0.091721	0.113353	0.041563
15	0.030750	0.033996	0.005607	0.125886	0.019612	0.059299	0.023479
16	-0.130672	-0.016237	0.042022	0.025122	0.198116	0.156555	0.034673
17	-0.026053	-0.014463	-0.009895	0.001302	0.046938	0.099707	0.030680
18	0.011036	-0.005262	0.006587	-0.015007	0.029098	0.039720	0.026276
19	0.003227	-0.033855	0.013631	-0.024761	0.036261	0.040246	0.017762
20	0.034576	-0.022323	0.099367	-0.025289	0.041214	0.070477	0.063816
21	-0.034925	0.014370	-0.084776	0.044212	0.018731	0.012640	-0.039818
22	-0.026302	0.040247	-0.038584	0.100084	0.042925	0.074886	0.041665
23	0.092990	-0.021674	0.140987	0.070749	0.210370	0.245007	0.299795
24	0.050067	0.069589	0.025718	0.080074	0.029810	0.038151	0.034875
25	-0.060928	-0.007072	-0.046433	0.082642	-0.084330	-0.093943	-0.093599
26	-0.122467	-0.020883	-0.072929	0.084560	-0.044447	-0.058634	-0.121075
27	-0.022401	0.016061	-0.044731	0.000036	0.000422	0.043892	0.007880
28	-0.026359	-0.028125	0.007837	-0.006684	-0.023120	-0.056021	-0.019263
29	-0.056142	0.078535	-0.067759	-0.014492	-0.149594	-0.003982	-0.112288
30	-0.071332	0.045349	0.014697	-0.038187	0.039981	0.049408	0.056469
31	-0.000347	-0.079388	-0.003230	0.014275	-0.035139	0.008392	-0.024865
32	0.074034	-0.058526	0.065908	-0.031614	0.031575	0.057668	0.077344
33	-0.187928	-0.066829	-0.084522	-0.041232	0.029625	0.100844	-0.043438
34	-0.001354	-0.064027	-0.014577	0.050764	0.058131	0.028098	0.004985
35	0.017033	-0.022612	0.035303	-0.017019	0.093428	0.110460	0.127392
36	1.000000	-0.054162	0.150194	0.106569	-0.039525	-0.080694	0.068419
37	-0.054162	1.000000	-0.012849	-0.065524	-0.075929	-0.009330	0.017385
38	0.150194	-0.012849	1.000000	-0.058626	0.133927	0.028496	0.220741
39	0.106569	-0.065524	-0.058626	1.000000	-0.040076	-0.099280	0.010027
40	-0.039525	-0.075929	0.133927	-0.040076	1.000000	0.469625	0.324041
41	-0.080694	-0.009330	0.028696	-0.099280	0.469625	1.000000	0.305701
42	0.068419	0.017385	0.220741	0.010027	0.324041	0.305701	1.000000
43	0.102824	-0.000775	0.272609	-0.031883	0.229837	0.136980	0.378384
44	0.026765	-0.069979	0.040787	0.035448	0.148373	0.133530	0.111705
45	-0.012355	-0.012514	0.079387	0.111878	0.141005	0.110283	0.086228
46	0.039326	-0.062968	0.051057	0.081386	0.292697	0.324727	0.220395
47	0.104080	0.012829	0.254861	-0.034739	0.345637	0.270326	0.397807
48	0.137271	-0.073131	0.234005	0.073890	0.064463	-0.001995	0.109085
49	0.000117	0.064007	0.127445	-0.083267	0.143522	0.072951	0.193503
50	0.334103	-0.037445	0.155486	0.163587	0.298042	0.341268	0.354661

ELEMENTARY PRINCIPALS

CORRELATION MATRIX ALL VARIABLES

	36	37	38	39	40	41	42
51	-0.166948	0.021624	-0.051717	-0.202336	0.004713	0.039000	-0.002736
52	-0.099555	0.045762	-0.000710	-0.215645	0.098594	0.107329	0.026483
53	0.110998	0.162275	0.078808	0.067266	0.021200	0.090006	0.184263
54	0.070745	0.155125	0.079068	0.046108	-0.043908	0.044732	0.130041
55	0.072508	0.009168	0.060106	0.073510	0.023239	0.010884	0.063364
56	0.049376	0.028876	0.239825	-0.005409	0.091805	0.139052	0.214712
57	-0.014709	-0.029419	0.006599	-0.051015	-0.029399	-0.011584	0.015444
58	-0.026487	-0.016320	0.078364	0.001675	0.216920	0.311592	0.162479
59	0.007977	-0.026250	-0.150723	0.081325	-0.035301	0.029032	-0.169676
60	0.032601	-0.037260	-0.001926	0.039541	0.031303	0.006857	0.019609
61	0.010056	-0.039398	0.041276	0.032590	0.107454	0.090855	0.052100
62	0.084527	0.017429	0.232383	0.015334	0.199523	0.245946	0.405032

ELEMENTARY PRINCIPALS

CORRELATION MATRIX ALL VARIABLES

	43	44	45	46	47	48	49
1	0.416613	0.112951	0.090292	0.143440	0.418937	0.078604	0.195416
2	0.080303	0.084672	0.086113	0.046700	0.035847	0.048674	-0.005238
3	0.026721	0.000455	-0.002759	-0.050468	0.146903	-0.035701	0.028127
4	0.099813	0.010232	0.011246	-0.046450	0.250681	-0.054971	0.067081
5	0.256410	0.030287	0.052490	-0.002685	0.223417	0.178475	0.158629
6	0.295745	0.103393	0.107098	0.121987	0.368125	0.134543	0.112998
7	0.254700	0.033425	0.016682	0.150251	0.347962	0.031118	0.063831
8	0.193050	0.080021	0.088611	0.122411	0.258775	0.111167	0.062650
9	0.081477	0.011896	-0.016299	0.013241	0.034498	0.004867	-0.015946
10	-0.252386	-0.028550	-0.020769	-0.005699	-0.170597	-0.033631	-0.154891
11	0.018055	0.032649	0.095617	0.186774	0.046326	0.000162	-0.037865
12	0.299331	0.132116	0.169842	0.521213	0.262726	0.096923	0.135530
13	0.098100	0.108610	0.120140	0.131048	0.124413	0.018043	0.029537
14	0.043389	0.107167	0.026932	0.067256	0.073800	0.033927	-0.017257
15	0.023327	0.035950	0.022515	0.057373	0.048720	0.000706	-0.033471
16	0.058031	0.042292	0.205229	0.154481	0.032267	0.001813	-0.026241
17	0.036220	0.025657	0.118180	0.121964	0.031590	-0.016601	-0.068673
18	0.055441	0.044129	0.126970	0.099933	0.018554	0.022707	-0.069378
19	0.050099	0.031557	0.121674	0.044625	0.035220	-0.024512	-0.062849
20	0.099166	0.032444	0.137172	0.038009	0.087101	-0.002729	0.024808
21	-0.045723	0.059284	0.115200	0.049041	-0.028099	-0.023520	-0.037746
22	-0.001351	0.055187	0.038543	0.043651	0.006856	0.008507	-0.017098
23	0.267942	0.161092	0.143177	0.339329	0.312933	0.033997	0.077409
24	0.009324	0.072179	0.023083	0.061351	0.041999	0.015940	0.022840
25	-0.128771	-0.010364	0.068551	-0.011757	-0.121518	-0.015943	-0.120829
26	-0.135811	0.001037	0.073872	-0.050682	-0.124338	-0.071062	-0.089505
27	-0.092744	-0.079645	-0.023817	-0.051149	-0.082070	-0.118998	-0.046849
28	-0.042599	-0.024026	-0.053524	-0.047125	-0.014194	-0.009247	0.054278
29	-0.043021	-0.083385	-0.056542	-0.094561	-0.023818	-0.069624	0.033965
30	0.076568	-0.023698	0.011597	-0.015466	0.044770	0.011609	0.069124
31	-0.039059	-0.002854	0.025236	-0.007209	0.017013	-0.033854	-0.028500
32	0.137001	0.047265	0.002352	0.104861	0.134988	0.067614	-0.003102
33	-0.051351	0.042904	0.081444	0.043745	-0.018937	-0.085076	0.017738
34	0.044070	0.075501	0.159669	0.093899	0.035557	0.030531	-0.064746
35	0.102369	0.107306	0.097195	0.065786	0.098264	0.032288	0.008726
36	0.102924	0.026765	-0.012385	0.039326	0.104080	0.137271	0.000117
37	-0.000775	-0.059979	-0.013514	-0.052968	0.012829	-0.073131	0.064007
38	0.272609	0.040787	0.079387	0.051057	0.264861	0.234005	0.127445
39	-0.031883	0.035446	0.111878	0.081386	-0.034739	0.079890	-0.083267
40	0.229837	0.148373	0.141005	0.292697	0.345637	0.064465	0.143522
41	0.136980	0.133530	0.110283	0.324727	0.270326	-0.001995	0.072951
42	0.376384	0.111705	0.086228	0.220395	0.397807	0.109086	0.193503
43	1.000000	0.075592	0.103039	0.242895	0.382582	0.130918	0.143735
44	0.075592	1.000000	0.208337	0.197174	0.136591	0.010059	0.009111
45	0.103039	0.208337	1.000000	0.219308	0.150410	0.036630	0.031181
46	0.242895	0.197174	0.219308	1.000000	0.234580	0.127161	0.040726
47	0.382582	0.136591	0.150410	0.234590	1.000000	0.062298	0.140720
48	0.130918	0.010059	0.036630	0.127161	0.062298	1.000000	0.007757
49	0.143735	0.009111	0.031181	0.040726	0.140720	0.007757	1.000000
50	0.256362	0.203021	0.212095	0.444730	0.397473	0.071914	0.075425

ELEMENTARY PRINCIPALS

```
CORRELATION MATRIX       ALL VARIABLES

                  43            44            45            46            47            48            49

  51        0.025628     -0.050245     -0.084367     -0.084374     -0.034251     -0.057033      0.088838
  52        0.077384     -0.139160     -0.123276     -0.035129      0.026195     -0.030753      0.145513
  53        0.171981      0.057959      0.086459      0.123468      0.164605      0.013389      0.076380
  54        0.148852      0.022053      0.081272      0.082638      0.146969      0.040526      0.048124
  55        0.099235      0.097427      0.171795      0.110486      0.095414     -0.021012      0.022402
  56        0.199440      0.111454      0.134589      0.100409      0.257299      0.057018      0.141368
  57        0.044798      0.062644      0.032836      0.014786      0.030444     -0.104833      0.053828
  58        0.198326      0.130049      0.240079      0.290250      0.182521     -0.007546      0.024146
  59       -0.166433      0.018000      0.056090      0.112225     -0.143560     -0.036756     -0.155696
  60        0.054767      0.214274      0.139254      0.108097      0.021810      0.008783      0.041216
  61        0.084395      0.403277      0.163715      0.133502      0.091412     -0.008424     -0.006634
  62        0.340357      0.153011      0.187817      0.229034      0.381754      0.039103      0.142317
```

ELEMENTARY PRINCIPALS

CORRELATION MATRIX   ALL VARIABLES

```
              50           51           52           53           54           55           56

  1     0.302609    -0.031644     0.039102     0.120680     0.100478     0.149312     0.353519
  2     0.069058    -0.065288    -0.150568     0.017982     0.055791     0.098924     0.081946
  3     0.050279     0.123637     0.186889     0.013921     0.038788    -0.017502     0.095205
  4     0.035069     0.083862     0.094850     0.093132     0.066762     0.023452     0.138471
  5     0.002933     0.201876     0.213673     0.040252     0.047677    -0.090807     0.188457
  6     0.442225    -0.092722    -0.078762     0.271428     0.266781     0.200270     0.219853
  7     0.349429     0.100833     0.242981     0.153302     0.078239    -0.009730     0.091934
  8     0.269737    -0.047236    -0.028074     0.134522     0.158518     0.136843     0.260573
  9     0.020394     0.078509     0.072182    -0.013942    -0.014276    -0.119439    -0.043372
 10    -0.064538    -0.003973    -0.055593    -0.060541    -0.031069    -0.045638    -0.217508
 11     0.144295    -0.003446     0.049551    -0.026951    -0.066693     0.044097     0.034270
 12     0.529505    -0.009120     0.047711     0.213137     0.201086     0.130959     0.180857
 13     0.159437    -0.045555    -0.071747     0.031059     0.005232     0.048659     0.017569
 14     0.125029    -0.029269    -0.037083    -0.011602     0.004494    -0.024688    -0.009952
 15     0.131972    -0.108775    -0.129209     0.023681     0.069535     0.065220     0.017797
 16     0.072104    -0.015084    -0.040049    -0.005213    -0.030123     0.132656     0.069676
 17     0.071548     0.029376     0.058213    -0.017121    -0.018504     0.030355     0.010133
 18     0.022723     0.001452     0.022502     0.007694    -0.015169     0.026102    -0.021844
 19     0.025707     0.002409     0.036598     0.006154    -0.026751     0.046988     0.018365
 20     0.062601     0.055685     0.039477     0.037200     0.043713     0.078307     0.071641
 21    -0.007347    -0.015089    -0.006445    -0.024701    -0.026622     0.042810    -0.002656
 22     0.098287    -0.017344    -0.098370    -0.002895     0.037126    -0.024987    -0.049036
 23     0.496846    -0.062172    -0.022240     0.159738     0.155457     0.136252     0.171294
 24     0.132271    -0.078002    -0.073378     0.044383     0.084932     0.114722     0.017450
 25    -0.073473    -0.097819    -0.145506    -0.040858    -0.013490     0.053573    -0.036570
 26    -0.108368    -0.049750    -0.144459    -0.043516    -0.029845     0.056587    -0.013280
 27    -0.087022    -0.012340     0.025504    -0.065911    -0.096140    -0.095879    -0.072814
 28    -0.055823    -0.028981    -0.005868    -0.018986     0.026966    -0.004565     0.027831
 29    -0.027962    -0.000270    -0.011139     0.004666     0.019042     0.005271     0.005519
 30    -0.043077     0.115437     0.133694    -0.018211    -0.025372    -0.090216     0.024262
 31     0.017800    -0.052183    -0.074187    -0.021978     0.026440     0.030808     0.013297
 32     0.095380     0.011747    -0.057217     0.035795     0.052490     0.029921     0.026168
 33     0.013455     0.095430     0.038235    -0.096165    -0.078633    -0.048405    -0.038705
 34     0.014812    -0.036430    -0.096507    -0.020815     0.003653     0.014000    -0.021173
 35     0.125091     0.073118     0.039185     0.078091     0.079561    -0.015991     0.023703
 36     0.334108    -0.166950    -0.099555     0.110998     0.070745     0.072508     0.049376
 37    -0.035485     0.021624     0.045762     0.162275     0.155125     0.009168     0.028876
 38     0.153486    -0.051717    -0.000710     0.078806     0.079068     0.060106     0.239825
 39     0.153387    -0.202336    -0.215645     0.067266     0.046108     0.073510    -0.005409
 40     0.298042     0.004713     0.098594     0.021200    -0.043908     0.023239     0.091805
 41     0.341268     0.039000     0.107329     0.090006     0.044732     0.010884     0.139052
 42     0.354561    -0.002736     0.026483     0.184263     0.130041     0.063364     0.214712
 43     0.266352     0.025628     0.077384     0.171981     0.148852     0.099235     0.199440
 44     0.208021    -0.050245    -0.139160     0.057999     0.022053     0.097427     0.111454
 45     0.212098    -0.084367    -0.123276     0.086459     0.081272     0.171796     0.134589
 46     0.444730    -0.084374    -0.035129     0.123468     0.082638     0.110486     0.100409
 47     0.397473    -0.034251     0.026196     0.164605     0.146969     0.095414     0.257299
 48     0.071914    -0.057033    -0.030753     0.013389     0.040326    -0.021012     0.057018
 49     0.075425     0.088837     0.145513     0.076380     0.048124     0.022402     0.141368
 50     1.000000    -0.185868    -0.104105     0.284035     0.237332     0.226497     0.208116
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ELEMENTARY PRINCIPALS

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CORRELATION MATRIX      ALL VARIABLES

                 50            51            52            53            54            55            56

   51       -0.195388      1.000000      0.307536     -0.076007     -0.087669     -0.161069     -0.076963
   52       -0.104105      0.307535      1.000000     -0.023591     -0.076923     -0.184203     -0.107760
   53        0.284035     -0.076006     -0.023591      1.000000      0.639460      0.182982      0.230792
   54        0.227332     -0.087669     -0.076923      0.639460      1.000000      0.217007      0.245497
   55        0.226497     -0.161069     -0.184203      0.182982      0.217008      1.000000      0.187281
   56        0.208116     -0.076963     -0.107760      0.230792      0.245497      0.187281      1.000000
   57        0.059130      0.016131      0.040647      0.038902      0.065679      0.069047      0.085444
   58        0.252945     -0.006468     -0.034536      0.073774      0.038543      0.138058      0.125231
   59        0.009477     -0.051781     -0.143397     -0.073745     -0.067776      0.027417     -0.157183
   60        0.056922     -0.036710     -0.071620      0.053908      0.071571      0.148108      0.091558
   61        0.099870     -0.081252     -0.080238      0.076143      0.087038      0.178852      0.147383
   62        0.353842     -0.009722      0.072154      0.212262      0.174199      0.114971      0.226663
```

ELEMENTARY PRINCIPALS

CORRELATION MATRIX   ALL VARIABLES

	57	58	59	60	61	62
1	0.027525	0.133739	-0.259604	0.022301	0.114951	0.329985
2	0.020986	0.023004	-0.010240	0.021195	0.043722	0.051695
3	-0.001421	0.102544	-0.079891	0.028907	0.056982	0.142967
4	-0.005581	0.059353	-0.156139	0.036046	0.030774	0.190139
5	0.033874	0.070449	-0.209055	-0.083733	-0.022078	0.183691
6	0.015761	0.104066	-0.205907	0.044044	0.107705	0.322496
7	-0.052091	0.124203	-0.054250	-0.008555	0.045589	0.307577
8	-0.035802	0.098956	-0.059634	0.033067	0.092203	0.232792
9	-0.022267	0.044106	0.042806	0.000285	-0.033387	0.038137
10	-0.050566	0.016422	0.241873	-0.009090	-0.047899	-0.158256
11	-0.057466	0.302512	0.189308	0.095493	0.089592	0.148068
12	0.039204	0.300604	-0.030587	0.060155	0.069891	0.298071
13	0.023068	0.131469	0.001982	0.199685	0.183097	0.182024
14	-0.046498	0.135173	0.094466	0.157124	0.150547	0.116152
15	-0.052101	0.134635	0.109833	0.199587	0.174723	0.079100
16	0.028775	0.266947	0.123705	0.096973	0.113358	0.071264
17	0.013434	0.254564	0.111638	0.082070	0.021396	0.078704
18	-0.006174	0.169310	0.089941	0.057212	0.022476	0.056233
19	0.012012	0.173574	0.053345	0.039412	0.023117	0.055848
20	0.026564	0.212576	-0.010194	0.040162	0.065499	0.064887
21	-0.026753	0.157342	0.076790	0.002438	-0.000244	0.005146
22	0.032093	0.114415	0.113677	0.072441	0.050814	0.034817
23	0.057538	0.277592	0.005799	0.056680	0.100247	0.288154
24	0.023452	0.060967	0.124773	0.131542	0.095785	0.059221
25	-0.009708	0.025069	0.068693	0.019816	0.014508	-0.091679
26	-0.012503	-0.007659	0.094616	0.005109	0.003959	-0.124789
27	-0.091983	0.014310	0.034662	-0.029598	-0.011445	-0.011758
28	0.035719	-0.095064	-0.030913	-0.036483	-0.055798	-0.074057
29	0.017613	0.009521	-0.025028	-0.065221	-0.078223	-0.118716
30	-0.000291	0.023483	-0.047460	-0.071223	-0.060844	0.020829
31	0.053296	-0.031292	0.020290	-0.031367	-0.013467	-0.021810
32	0.008545	0.144969	0.121253	0.020750	-0.018732	0.092848
33	0.042143	0.145340	0.070561	0.053726	0.041816	0.003692
34	-0.023205	0.137941	0.119350	0.082276	0.067502	0.058231
35	0.014295	0.150167	0.051369	0.073816	0.074097	0.218747
36	-0.014709	-0.026487	0.007977	0.032601	0.010056	0.084527
37	-0.029419	-0.016320	-0.026250	-0.037260	-0.039398	0.017429
38	0.006599	0.078364	-0.150723	-0.001926	0.041276	0.232383
39	-0.051015	0.001675	0.081325	0.039541	0.032590	0.015334
40	-0.029399	0.216920	-0.035301	0.031803	0.107454	0.199523
41	-0.011584	0.311592	0.029032	0.006857	0.090655	0.245946
42	0.015444	0.162479	-0.169676	0.019609	0.052100	0.405032
43	0.044798	0.195325	-0.166433	0.054767	0.084395	0.340357
44	0.062344	0.130049	0.018000	0.214274	0.403277	0.158011
45	0.032836	0.240079	0.056090	0.139254	0.163715	0.187817
46	0.014756	0.290250	0.112225	0.108097	0.133502	0.229034
47	0.030444	0.182521	-0.145560	0.021810	0.091412	0.381754
48	-0.104833	-0.007546	-0.036756	0.006783	-0.008424	0.039103
49	0.053828	0.024146	-0.155695	0.041216	-0.006634	0.142317
50	0.059130	0.252945	0.009477	0.056922	0.099870	0.353842

ELEMENTARY PRINCIPALS

```
CORRELATION MATRIX      ALL VARIABLES

                 57            58            59            60            61            62

   51         0.016131     -0.005468     -0.051761     -0.036710     -0.081252     -0.009722
   52         0.040647     -0.034536     -0.143397     -0.071620     -0.080238      0.072154
   53         0.028902      0.073774     -0.076745      0.053908      0.076143      0.212262
   54         0.065579      0.038543     -0.067776      0.071571      0.087038      0.174199
   55         0.069047      0.138058      0.027417      0.148108      0.178852      0.114971
   56         0.085444      0.125231     -0.157183      0.091558      0.147383      0.226663
   57         1.000000      0.041542     -0.068622      0.070464      0.058141      0.011582
   58         0.041542      1.000000      0.180267      0.133809      0.191472      0.327529
   59        -0.068622      0.180267      1.000000      0.075469      0.016572     -0.098222
   60         0.070464      0.133809      0.075469      1.000000      0.673990      0.104570
   61         0.058141      0.191472      0.016572      0.673990      1.000000      0.165434
   62         0.011582      0.327529     -0.098222      0.104570      0.165434      1.000000
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SECONDARY PRINCIPALS

```
ALL VARIABLES


THE NUMBER OF CBSERVATIONS IS       23264.

VARIABLE          SUMS          SUMS OF SQUARES            MEAN              SIGMA(N)            SIGMA(N-1)
    1          13024.1975        101150.6436            0.5598              2.0086              2.0086
    2         238491.7422       2683567.5625           10.2514              3.2031              3.2032
    3          21940.5586         21940.5637            0.9431              0.2317              0.2317
    4          14305.3438         14305.3917            0.6149              0.4866              0.4866
    5          61087.8179        168516.6250            2.6258              0.5905              0.5905
    6          71619.9727        301994.0742            3.0785              1.8718              1.8718
    7          78181.8213        300250.5352            3.3606              1.2698              1.2699
    8          12060.9775         12060.9811            0.5184              0.4997              0.4997
    9           3856.4294          1394.0776            0.1658              0.1801              0.1801
   10         147830.1387        947355.3906            6.3544              0.5860              0.5860
   11         179093.1582       1429598.2656            7.6982              1.4792              1.4793
   12      0.11491534E 09    0.82597466E 12         4939.5524           3332.3781           3332.4497
   13          41710.3579        117926.6777            1.7929              1.3618              1.3618
   14         335244.8828      10602574.5000           14.4103             15.7508             15.7512
   15         351977.0898      12403950.3750           15.1295             17.4434             17.4438
   16          20551.4902         20551.4907            0.8834              0.3210              0.3210
   17          18093.6011         18093.6025            0.7777              0.4158              0.4158
   18          16804.4250         16804.4268            0.7223              0.4479              0.4479
   19          15415.5153         15415.5172            0.6626              0.4728              0.4728
   20          11990.5796         11990.5811            0.5154              0.4998              0.4998
   21          16281.1571         16281.1581            0.6998              0.4583              0.4583
   22          71265.2539        989852.1563            3.0633              5.7589              5.7590
   23          62309.5435        209320.4160            2.6783              1.3506              1.3506
   24          48112.9873        332149.5117            2.0681              3.1623              3.1624
   25         181586.0703       6605830.8125            7.8053             14.9340             14.9343
   26         193203.9414       9421858.1250            8.3047             18.3309             18.3313
   27          42229.1514        126496.1641            1.8152              1.4637              1.4637
   28          84322.5576        394946.5039            3.6245              1.9594              1.9594
   29          67221.1982        211404.4883            2.8895              0.8591              0.8592
   30          21995.8511         21995.8513            0.9455              0.2270              0.2271
   31          79722.7578       5070738.1875            3.4268             14.3603             14.3606
   32          52514.3540        160900.9512            2.2573              1.3494              1.3494
   33          91980.1680        551529.1328            3.9537              2.8417              2.8418
   34          23518.5740         49266.7412            1.0109              1.0468              1.0468
   35          22732.2969         44758.8184            0.9771              0.9844              0.9845
   36         523514.0156      12299554.2500           22.5029              4.7232              4.7233
   37         277695.6250       6667473.4375           11.9365             12.0048             12.0051
   38          28292.8445         54732.4268            1.2161              0.9347              0.9347
   39           4489.7734          8531.2209            0.1930              0.5740              0.5740
   40          52570.1240        205464.1172            2.2597              1.9302              1.9302
   41          76084.6709        296281.5234            3.2704              1.4282              1.4282
   42          12630.5732         24155.3125            0.5429              0.8623              0.8623
   43          35648.0679         84889.9629            1.5323              1.1406              1.1406
   44          12255.0780         23144.5820            0.5268              0.8470              0.8470
   45          36704.6069        115714.9814            1.5777              1.5763              1.5763
   46          21032.4199         27978.8774            0.9041              0.6207              0.6208
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SECONDARY PRINCIPALS

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ALL VARIABLES

THE NUMBER OF OBSERVATIONS IS      23264.

VARIABLE         SUMS        SUMS OF SQUARES            MEAN          SIGMA(N)        SIGMA(N-1)
    47       8135.6119          6197.1697             0.3497            0.3796            0.3796
    48       9888.0996          7590.6807             0.4250            0.3816            0.3816
    49       7709.6287          7709.6326             0.3314            0.4707            0.4707
    50   18362950.0000     0.21897688E 11           789.3181          564.1216          564.1337
    51    2186082.9063     0.20563270E 09            93.9672            3.0233            3.0233
    52    1711461.9063     0.15909843E 09            73.5659           37.7728           37.7736
    53     121481.7754       1215240.7031             5.2218            4.9969            4.9970
    54     117767.9541       1248431.4219             5.0622            5.2950            5.2951
    55      65257.2495        300558.9219             2.8050            2.2475            2.2475
    56      90439.6104        875139.8750             3.8875            4.7439            4.7440
    57       6402.8516          6402.8646             0.2752            0.4466            0.4466
    58     260874.1758       3200172.3125            11.2135            3.4373            3.4373
    59      38561.7261         73458.3564             1.6575            0.6404            0.6404
    60      96948.7051       1112170.0313             4.1673            5.5172            5.5173
    61     126438.1396       1731736.6875             5.4349            6.7007            6.7009
    62      41469.0430        134499.1270             1.7825            1.6137            1.6137
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SECONDARY PRINCIPALS

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CORRELATION MATRIX      ALL VARIABLES

                    1            2            3            4            5            6            7

   1         1.000000    -0.069726     0.015688    -0.062663    -0.186307     0.076928    -0.049765
   2        -0.069726     1.000000     0.022057     0.206926     0.292235     0.513522     0.334435
   3         0.015688     0.022057     1.000000     0.241876    -0.058535    -0.016780     0.024658
   4        -0.062663     0.206926     0.241876     1.000000     0.146846     0.249803     0.260098
   5        -0.186307     0.292235    -0.058535     0.146846     1.000000     0.151785     0.151039
   6         0.076928     0.513522    -0.016780     0.249803     0.151785     1.000000     0.387458
   7        -0.049765     0.334435     0.024658     0.260098     0.151038     0.387458     1.000000
   8         0.000515     0.337572    -0.024747     0.182053     0.194592     0.388971     0.263813
   9         0.064861    -0.043237    -0.065568    -0.037824     0.048476    -0.014818     0.084173
  10         0.006196    -0.026659     0.057526     0.042683     0.040910    -0.030367     0.048848
  11        -0.002506     0.209064     0.116265     0.223253     0.044575     0.129748     0.147991
  12         0.005056     0.537180     0.058634     0.265889     0.174729     0.455367     0.357174
  13        -0.014455     0.389421    -0.038005     0.183071     0.159538     0.359094     0.299929
  14        -0.000044     0.145404     0.008500     0.047545     0.050784     0.028455     0.133017
  15         0.165369     0.065308    -0.001942     0.037088    -0.051918     0.014960    -0.053074
  16         0.003381     0.234141     0.120792     0.113462     0.136277     0.048752     0.064706
  17         0.068618    -0.008123     0.166370     0.124891    -0.069209    -0.172923     0.016145
  18         0.056599    -0.097904     0.255879     0.172608    -0.129127    -0.263922    -0.044605
  19         0.026262    -0.001437     0.239307     0.192838    -0.029287    -0.173686     0.009321
  20         0.025383     0.370543    -0.011120     0.228248     0.076107     0.275639     0.290283
  21         0.031598     0.167976     0.101995     0.090884    -0.054812    -0.008715     0.069583
  22         0.033441     0.049135    -0.093641     0.021878     0.004079     0.013360     0.022385
  23        -0.070381     0.551276     0.042439     0.264275     0.188435     0.449261     0.302485
  24        -0.030509     0.215254    -0.063335     0.091422     0.124871     0.132089     0.134129
  25         0.006544    -0.042793    -0.023002    -0.118960    -0.105440    -0.110141    -0.185342
  26        -0.036727    -0.154077     0.025844    -0.124495    -0.015611    -0.187688    -0.239906
  27         0.041803    -0.140601     0.079345    -0.022995    -0.141621    -0.006791     0.024739
  28         0.014150    -0.155868    -0.019169    -0.019913     0.046248    -0.115434    -0.118731
  29        -0.028728    -0.086536    -0.026958    -0.035255    -0.069717    -0.080645    -0.078783
  30        -0.095950     0.144874     0.032756     0.034409     0.197257     0.089640     0.064316
  31         0.048245    -0.065180    -0.013981     0.047260    -0.066478     0.018754     0.000722
  32         0.026065    -0.184303     0.015847    -0.103613    -0.038978    -0.275109    -0.150830
  33         0.050106    -0.262754     0.018506    -0.090032    -0.106099    -0.272223    -0.179050
  34         0.043509    -0.033315    -0.032930     0.081313     0.019256    -0.063930     0.036040
  35        -0.015492     0.348637    -0.037178     0.143463     0.138241     0.320235     0.258761
  36         0.161160    -0.193019    -0.093361    -0.040635    -0.236532     0.036567     0.041140
  37        -0.094941    -0.107354     0.016111    -0.059109     0.055117    -0.201559    -0.119812
  38        -0.124004     0.377188    -0.109984     0.102399     0.275904     0.251988     0.094967
  39         0.202923     0.069651     0.043462    -0.042803    -0.222959     0.205059     0.043015
  40        -0.030766     0.541865     0.031997     0.204293     0.238803     0.517644     0.399670
  41        -0.029309     0.378086     0.078697     0.190009     0.140784     0.283903     0.300981
  42        -0.037722     0.429499    -0.025446     0.070797     0.240664     0.349469     0.206430
  43        -0.058235     0.531455    -0.046925     0.086568     0.313919     0.343415     0.301515
  44        -0.008990     0.399140    -0.025573     0.027347     0.087223     0.380774     0.113366
  45        -0.022813     0.630579     0.038904     0.268053     0.197598     0.554925     0.337615
  46         0.090509     0.477137     0.067820     0.194146     0.064414     0.445976     0.343783
  47         0.021308     0.559544    -0.002464     0.149354     0.256348     0.457949     0.313285
  48         0.045529     0.281516    -0.031934     0.091783     0.280728     0.254452     0.119447
  49        -0.105631     0.207140     0.000677     0.116851     0.224053     0.236300     0.151857
  50         0.071687     0.561804     0.023765     0.216204     0.105642     0.610970     0.337120
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SECONDARY PRINCIPALS

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CORRELATION MATRIX      ALL VARIABLES

                  1            2            3            4            5            6            7

 51       -0.194161    -0.051509     0.006523     0.072944     0.277478    -0.119326     0.116636
 52       -0.432396     0.068207     0.056052     0.163377     0.264587    -0.032772     0.316436
 53       -0.103760     0.228710     0.002798     0.014133     0.005001     0.207096     0.085872
 54        0.011619     0.173921    -0.008481     0.080975     0.049074     0.145719     0.052211
 55        0.055956     0.170357     0.062947     0.031671    -0.094916     0.192329    -0.076510
 56       -0.122654     0.427616     0.020177     0.200227     0.220888     0.307790     0.113054
 57       -0.083117     0.006793    -0.141754    -0.159352     0.305837     0.000862    -0.006254
 58        0.091220     0.452416     0.101944     0.252402     0.071335     0.306055     0.334066
 59        0.105893     0.038176     0.003635     0.064353     0.034270     0.036145     0.141281
 60        0.030426     0.180103    -0.107105     0.059588     0.046052     0.143957     0.042686
 61       -0.005516     0.331059    -0.009244     0.107734     0.066443     0.252897     0.069060
 62       -0.044524     0.546600    -0.107840     0.101165     0.290484     0.440037     0.308440
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SECONDARY PRINCIPALS

CORRELATION MATRIX ALL VARIABLES

	8	9	10	11	12	13	14
1	0.000515	0.064861	0.006196	-0.002506	0.005056	-0.014455	-0.000044
2	0.337572	-0.043237	-0.026659	0.209064	0.537180	0.389421	0.145404
3	-0.024747	-0.065568	0.057526	0.116265	0.058634	-0.038005	0.008500
4	0.182053	-0.037824	0.042683	0.223253	0.265889	0.183071	0.047545
5	0.194592	0.048476	0.040910	0.044575	0.174729	0.159538	0.050784
6	0.388971	-0.014818	-0.030367	0.129748	0.455367	0.359094	0.028455
7	0.263813	0.084173	0.048848	0.147991	0.357174	0.299929	0.133017
8	1.000000	-0.049467	-0.057947	0.169535	0.330024	0.251419	0.077781
9	-0.049467	1.000000	0.095067	-0.115904	-0.042725	0.029633	0.030613
10	-0.057947	0.095067	1.000000	0.129138	0.131178	-0.063924	-0.051552
11	0.169535	-0.115904	0.129138	1.000000	0.295943	0.080309	0.007883
12	0.330024	-0.042725	0.131178	0.295943	1.000000	0.354117	0.142145
13	0.251419	0.029633	-0.063924	0.080309	0.354117	1.000000	0.540686
14	0.077781	0.030613	-0.051552	0.007883	0.142145	0.540686	1.000000
15	0.029780	-0.014141	-0.059362	-0.088575	0.034895	0.471513	0.526292
16	0.082996	-0.018507	0.048758	0.204599	0.230280	0.141637	0.095665
17	-0.050623	0.019240	0.159315	0.301824	0.161537	-0.041386	0.066073
18	-0.092746	-0.039204	0.110259	0.375953	0.082949	-0.103715	0.074718
19	-0.036807	-0.024693	0.079407	0.370523	0.146376	-0.034500	0.091628
20	0.209723	0.030816	0.040809	0.191617	0.374218	0.319217	0.107521
21	0.029712	-0.024035	0.021259	0.340751	0.232115	0.084809	0.079802
22	0.070528	-0.005408	-0.022358	-0.073959	0.057008	0.324028	0.344250
23	0.271004	-0.041548	0.016250	0.277000	0.560676	0.418353	0.150184
24	0.226460	-0.069777	-0.028018	0.098714	0.164290	0.437069	0.288752
25	-0.063891	-0.046580	-0.033571	-0.058937	-0.091161	-0.003772	-0.028908
26	-0.124275	0.058011	-0.024762	-0.090538	-0.136125	-0.119120	-0.084670
27	-0.004269	-0.023052	-0.000799	0.120875	0.041459	-0.002162	-0.005190
28	-0.074054	0.044692	-0.030253	-0.006627	-0.071853	-0.081116	0.034879
29	-0.093192	0.120400	-0.104561	-0.099132	-0.098909	-0.078923	-0.052236
30	0.104499	0.030983	0.010373	0.077200	0.107929	0.056396	-0.004757
31	-0.056316	0.150476	0.038184	-0.000440	-0.036972	0.018162	0.084585
32	-0.131658	0.041725	0.067243	-0.204907	-0.164499	-0.197626	-0.055554
33	-0.179492	0.105539	0.065986	-0.258113	-0.205507	-0.207624	-0.062603
34	-0.017980	-0.008160	0.062654	0.021785	0.040699	0.052131	0.054135
35	0.264259	0.006310	0.033380	0.187991	0.351509	0.369962	0.133583
36	-0.065645	-0.001842	-0.032042	-0.118357	0.007143	0.047062	0.005294
37	-0.152925	0.028828	-0.011279	-0.074212	-0.157586	-0.150572	-0.118219
38	0.183912	0.028495	-0.041678	0.028238	0.246253	0.197794	0.077229
39	0.025493	0.022215	-0.128449	0.024412	0.070143	0.060946	0.050849
40	0.287418	-0.031284	-0.002384	0.186306	0.509422	0.397061	0.075010
41	0.255295	0.024977	-0.053200	0.123843	0.380335	0.283303	0.070812
42	0.208315	0.033406	0.020429	0.125928	0.337845	0.246740	0.059192
43	0.261225	0.054494	-0.005934	0.096887	0.428792	0.381372	0.135071
44	0.227170	-0.001262	-0.060878	-0.019671	0.251281	0.310563	0.088975
45	0.290713	-0.025093	0.055566	0.358760	0.642939	0.432289	0.108150
46	0.234167	0.019620	0.012730	0.290782	0.563956	0.349518	0.089163
47	0.282121	0.020758	0.043349	0.113608	0.484259	0.326297	0.132040
48	0.189847	-0.029395	-0.055514	0.020626	0.220894	0.221049	0.021576
49	0.083240	-0.002408	-0.012917	-0.048011	0.145050	0.167890	0.043246
50	0.288179	-0.019275	-0.009690	0.255988	0.652520	0.403391	0.085892

SECONDARY PRINCIPALS

```
CORRELATION MATRIX      ALL VARIABLES

                         8            9           10           11           12           13           14

     51          -0.013873     0.125018     0.106716     0.003037     0.018557    -0.039641    -0.004908
     52           0.048511     0.006395     0.032246     0.131616     0.149216     0.083120     0.018928
     53           0.043938    -0.045288    -0.086395    -0.001821     0.094125     0.072835    -0.029086
     54           0.055965    -0.021417    -0.059247    -0.078040     0.019467    -0.017470    -0.063858
     55           0.110250    -0.101547    -0.017283     0.104393     0.163220     0.121114     0.035710
     56           0.286179    -0.044058    -0.098213     0.174672     0.342844     0.229797     0.126345
     57           0.016555     0.121715    -0.051072    -0.203389    -0.079177    -0.012165    -0.065452
     58           0.229205     0.044085     0.055158     0.391808     0.526702     0.323299     0.129044
     59           0.058714     0.043853     0.016310     0.140377     0.101855     0.021179     0.074952
     60           0.084169     0.005926     0.051492     0.093768     0.166992     0.261908     0.162576
     61           0.186251    -0.060263    -0.042199     0.051715     0.236275     0.320050     0.165758
     62           0.301630     0.010217     0.014632     0.114971     0.446071     0.441838     0.153502
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SECONDARY PRINCIPALS

CORRELATION MATRIX   ALL VARIABLES

	15	16	17	18	19	20	21
1	0.165369	0.003381	0.068618	0.056599	0.026262	0.025383	0.031598
2	0.065308	0.234141	-0.008123	-0.097904	-0.001437	0.370543	0.167976
3	-0.001942	0.120792	0.166370	0.255879	0.239307	-0.011120	0.101995
4	0.037088	0.113462	0.124891	0.172608	0.192838	0.228248	0.090884
5	-0.051918	0.136277	-0.069209	-0.129127	-0.029287	0.076107	-0.054812
6	0.014960	0.048752	-0.172923	-0.263922	-0.173686	0.275639	-0.008715
7	-0.053074	0.064706	0.016145	-0.044605	0.009321	0.290283	0.069583
8	0.029780	0.082996	-0.050623	-0.092746	-0.036807	0.209723	0.029712
9	-0.014141	-0.018507	0.019240	-0.039204	-0.024693	0.030816	-0.024035
10	-0.059362	0.048758	0.159315	0.110259	0.079407	0.040809	0.021259
11	-0.088575	0.204599	0.301824	0.375953	0.370523	0.191617	0.340751
12	0.034895	0.230280	0.161537	0.082949	0.146376	0.374218	0.232115
13	0.471513	0.141637	-0.041386	-0.103715	-0.034500	0.319217	0.084809
14	0.526292	0.095665	0.066073	0.074718	0.091628	0.107521	0.079802
15	1.000000	0.031859	0.003635	0.038699	0.031671	0.017273	0.018815
16	0.031859	1.000000	0.285273	0.218767	0.241511	0.179422	0.168046
17	0.003635	0.285273	1.000000	0.712838	0.607821	0.156082	0.383379
18	0.038699	0.218767	0.712838	1.000000	0.835875	0.071194	0.406289
19	0.031671	0.241511	0.607821	0.835875	1.000000	0.145701	0.372927
20	0.017273	0.179422	0.156082	0.071194	0.145701	1.000000	0.173150
21	0.018815	0.168046	0.383379	0.406289	0.372927	0.173150	1.000000
22	0.271184	-0.056686	-0.039241	-0.022627	-0.004681	0.027226	0.028558
23	0.030466	0.283124	0.063307	-0.029961	0.047756	0.408120	0.177384
24	0.287096	0.072565	-0.002654	0.004290	0.035715	0.092402	0.063466
25	0.004650	-0.059258	0.039989	0.043052	-0.003299	-0.128923	0.054610
26	-0.038807	-0.062965	0.080114	0.086127	0.064893	-0.162466	-0.003338
27	0.013889	0.050100	0.069668	0.077819	0.053856	0.046097	0.114661
28	0.047893	-0.041358	0.062004	0.064384	0.057522	-0.087858	0.024106
29	-0.047760	-0.100618	-0.151205	-0.149612	-0.117329	-0.096975	-0.086442
30	-0.073936	0.126244	0.032453	0.012808	0.122547	0.071935	0.039853
31	-0.008259	0.025510	0.074075	0.091941	0.089877	-0.021660	-0.058183
32	0.009377	0.045218	0.110448	0.133146	0.118984	-0.118622	-0.097881
33	-0.050822	-0.072169	0.083064	0.128326	0.099788	-0.147529	-0.125373
34	0.006930	0.117117	0.185410	0.225412	0.188437	0.095817	0.143240
35	0.069206	0.087921	0.067898	-0.015420	0.034091	0.349321	0.127520
36	0.105297	-0.164189	-0.111357	-0.123222	-0.167135	-0.046291	-0.117877
37	-0.043647	-0.000626	0.068884	0.012093	0.021158	-0.127934	-0.006376
38	0.019688	0.033400	-0.140152	-0.175724	-0.105614	0.143180	-0.026269
39	0.102654	-0.097934	0.006176	0.048521	0.033811	-0.013306	0.089321
40	0.006709	0.214603	-0.034899	-0.135598	-0.057446	0.404191	0.135648
41	0.026405	0.203189	0.118996	0.074808	0.097345	0.323175	0.173922
42	0.011185	0.059222	-0.020808	-0.099761	-0.075821	0.195605	0.018270
43	0.028196	0.212337	-0.017781	-0.133139	-0.041200	0.319719	0.130442
44	0.117952	0.0[illegible]56	-0.111478	-0.171128	-0.153383	0.184491	0.020124
45	0.040754	0.[illegible]832	0.149735	0.100712	0.145877	0.425792	0.257983
46	0.062542	0.212205	0.181571	0.137040	0.169133	0.363276	0.266021
47	-0.012741	0.193400	-0.017964	-0.101491	-0.028253	0.298919	0.103425
48	0.048818	0.034291	-0.055890	-0.070104	-0.032287	0.126415	0.010001
49	0.012964	0.060855	-0.137354	-0.207791	-0.155334	0.051382	-0.109163
50	0.079837	0.126784	0.102270	0.047842	0.084696	0.364071	0.199127

SECONDARY PRINCIPALS

CORRELATION MATRIX ALL VARIABLES

	15	16	17	18	19	20	21
51	-0.100783	0.050852	-0.031380	-0.034186	0.026778	0.004464	-0.094835
52	-0.156543	0.140929	0.061605	0.033799	0.139326	0.056248	0.073935
53	-0.001601	-0.002655	-0.118990	-0.149036	-0.102554	0.035466	0.021435
54	0.009187	-0.055049	-0.092281	-0.125155	-0.087263	0.040789	-0.063963
55	0.050528	0.083965	0.050390	0.031643	0.022576	0.057177	0.134288
56	0.005357	0.135206	-0.027084	-0.078239	-0.010898	0.168675	0.112961
57	-0.034754	-0.052367	-0.173435	-0.257940	-0.183460	-0.008022	-0.178797
58	0.023675	0.413430	0.336716	0.310484	0.360999	0.422081	0.381802
59	0.057309	0.034678	0.135890	0.196110	0.194330	0.136441	0.069600
60	0.142113	0.083413	0.079306	0.007922	0.013772	0.139725	0.035259
61	0.170007	0.083655	-0.062408	-0.084480	-0.062983	0.127964	0.069744
62	0.090384	0.171321	-0.020905	-0.175824	-0.108111	0.328393	0.078052

SECONDARY PRINCIPALS

CORRELATION MATRIX ALL VARIABLES

	22	23	24	25	26	27	28
1	0.033441	-0.070381	-0.030509	0.006544	-0.036727	0.041803	0.014150
2	0.049135	0.551276	0.215254	-0.042793	-0.154077	-0.140601	-0.155868
3	-0.093641	0.042439	-0.063335	-0.023002	0.025844	0.079345	-0.019169
4	0.021878	0.264275	0.091422	-0.118960	-0.124495	-0.022995	-0.019913
5	0.004079	0.188435	0.124871	-0.105440	-0.015611	-0.141621	0.046248
6	0.013360	0.449261	0.132089	-0.110141	-0.187688	-0.006791	-0.115434
7	0.022385	0.302485	0.134129	-0.185342	-0.239906	0.024739	-0.118731
8	0.070528	0.271004	0.226460	-0.063891	-0.124275	-0.004269	-0.074054
9	-0.005408	-0.041548	-0.069777	-0.046580	0.058011	-0.023052	0.044692
10	-0.022358	0.016250	-0.028018	-0.033571	-0.024762	-0.000799	-0.030253
11	-0.073959	0.277000	0.098714	-0.058937	-0.090538	0.120875	-0.006627
12	0.057008	0.560676	0.164290	-0.091161	-0.136125	0.041459	-0.071853
13	0.324028	0.418353	0.437069	-0.003772	-0.119120	-0.002162	-0.081116
14	0.344250	0.150184	0.288752	-0.028908	-0.084670	-0.005190	0.034879
15	0.271184	0.030466	0.287096	0.004650	-0.038807	0.013889	0.047893
16	-0.056686	0.283124	0.072565	-0.059258	-0.062965	0.050100	-0.041358
17	-0.039241	0.063307	-0.002654	0.039989	0.080114	0.069668	0.062004
18	-0.022627	-0.029961	0.004290	0.043052	0.086127	0.077819	0.064384
19	-0.004681	0.047756	0.035715	-0.003299	0.064893	0.053856	0.057522
20	0.027226	0.408120	0.092402	-0.128923	-0.162466	0.046097	-0.087858
21	0.028558	0.177384	0.063466	0.054610	-0.003338	0.114661	0.024106
22	1.000000	0.013627	0.478259	0.047787	0.001576	-0.001064	0.100371
23	0.013627	1.000000	0.215372	-0.055304	-0.105910	0.016887	-0.144241
24	0.478259	0.215372	1.000000	-0.066333	-0.094895	-0.009213	-0.118838
25	0.047787	-0.055304	-0.066333	1.000000	0.598854	-0.103598	-0.017320
26	0.001576	-0.105910	-0.094895	0.598854	1.000000	-0.093246	0.063938
27	-0.001064	0.016887	-0.009213	-0.103598	-0.093246	1.000000	0.088569
28	0.100371	-0.144241	-0.118838	-0.017320	0.063938	0.088569	1.000000
29	-0.044389	-0.095684	-0.073675	0.031133	0.082102	-0.002265	0.175307
30	-0.103883	0.100300	0.066056	-0.099948	-0.018783	0.031824	-0.046848
31	0.014766	-0.023364	-0.024074	-0.024642	-0.020463	0.066620	0.021145
32	0.013882	-0.154943	-0.098317	0.067055	0.093192	-0.094414	0.025741
33	0.056263	-0.216924	-0.103104	0.147611	0.192790	-0.057764	0.064474
34	0.094697	0.090060	0.005425	0.131483	0.095359	-0.003947	0.014812
35	0.135755	0.338232	0.168156	0.011700	-0.096786	0.006671	-0.107256
36	0.041801	-0.065316	-0.025572	0.031334	-0.097289	0.028405	-0.000404
37	-0.085959	-0.135480	-0.088515	-0.039238	0.048271	-0.018084	0.039760
38	0.057777	0.249488	0.112261	0.010151	-0.009282	-0.057465	0.005345
39	0.028359	0.023701	-0.017614	0.065590	-0.015387	0.027392	-0.057363
40	0.050610	0.569728	0.211113	-0.151842	-0.166825	-0.004222	-0.085793
41	0.002882	0.383068	0.113695	-0.068977	-0.072252	0.058063	-0.026911
42	0.054659	0.333063	0.115249	-0.068713	-0.069044	-0.086971	-0.038200
43	0.094699	0.448075	0.200626	-0.099076	-0.121218	-0.088738	-0.094330
44	0.071927	0.298502	0.138482	0.029999	-0.030516	-0.045922	-0.056289
45	0.042321	0.573193	0.240784	-0.060246	-0.125438	-0.033231	-0.122943
46	0.026561	0.490419	0.163916	-0.027850	-0.162158	0.084414	-0.097859
47	0.094683	0.469140	0.172688	-0.115912	-0.140601	-0.128740	-0.043442
48	0.015204	0.193717	0.142010	-0.041052	-0.100810	-0.054196	-0.093678
49	0.001639	0.121676	0.074169	-0.129964	-0.092071	0.013993	-0.027255
50	0.056421	0.538853	0.216912	-0.052797	-0.158016	-0.003352	-0.111868

SECONDARY PRINCIPALS

CORRELATION MATRIX ALL VARIABLES

	22	23	24	25	26	27	28
51	-0.058354	0.037581	-0.035484	-0.186283	-0.074881	0.056149	0.012955
52	-0.021879	0.185852	0.092075	-0.256583	-0.131500	0.083163	0.021521
53	0.006111	0.209173	0.108064	0.133547	0.090918	-0.021478	-0.172807
54	-0.005452	0.059984	0.030386	0.034649	0.029023	-0.059145	-0.102389
55	-0.024361	0.122105	0.056954	0.062330	0.031944	0.009725	-0.055452
56	0.075826	0.368938	0.217564	0.036931	-0.034117	-0.114627	-0.027390
57	-0.009992	0.035076	-0.013620	0.015369	0.007204	-0.018363	0.012093
58	0.048923	0.462651	0.203458	-0.102201	-0.166634	0.055805	-0.130826
59	0.050326	0.052391	0.065636	-0.046558	-0.084605	0.007017	0.013207
60	0.165721	0.149096	0.141811	0.111283	0.040847	0.000430	0.024260
61	0.144023	0.258853	0.176866	0.110150	0.015302	0.027894	-0.069737
62	0.103580	0.483939	0.271195	-0.086035	-0.135010	-0.031371	-0.086968

SECONDARY PRINCIPALS

CORRELATION MATRIX ALL VARIABLES

	29	30	31	32	33	34	35
1	-0.028728	-0.095950	0.048245	0.026065	0.050106	0.043509	-0.015492
2	-0.086536	0.144874	-0.065180	-0.184303	-0.262754	-0.033315	0.348637
3	-0.026958	0.032755	-0.013981	0.015847	0.018506	-0.032930	-0.037178
4	-0.035255	0.034409	0.047260	-0.103613	-0.090032	0.081313	0.143463
5	-0.069717	0.197257	-0.066478	-0.038978	-0.106099	0.019256	0.138241
6	-0.080645	0.089640	0.018754	-0.275109	-0.272223	-0.063930	0.320235
7	-0.078783	0.064316	0.000722	-0.150830	-0.179050	0.036040	0.258761
8	-0.093192	0.104499	-0.056316	-0.131658	-0.179492	-0.017979	0.264259
9	0.120400	0.030983	0.150476	0.041725	0.105539	-0.008160	0.006310
10	-0.104561	0.010373	0.038184	0.067243	0.065987	0.062654	0.033380
11	-0.099132	0.077200	-0.000440	-0.204907	-0.258113	0.021785	0.187991
12	-0.098909	0.107929	-0.036972	-0.164499	-0.205507	0.040699	0.351509
13	-0.078923	0.056396	0.018162	-0.197626	-0.207624	0.052131	0.369962
14	-0.052236	-0.004757	0.084585	-0.055554	-0.062603	0.054135	0.133583
15	-0.047760	-0.073936	-0.008259	0.009377	-0.050822	0.006930	0.069206
16	-0.100617	0.126244	0.025510	0.045218	-0.072169	0.117117	0.087921
17	-0.151205	0.032453	0.074075	0.110448	0.083064	0.185410	0.067898
18	-0.149612	0.012808	0.091941	0.133146	0.128326	0.225412	-0.015420
19	-0.117329	0.122547	0.089877	0.118984	0.099788	0.188437	0.034091
20	-0.096975	0.071935	-0.021660	-0.118622	-0.147529	0.095817	0.349321
21	-0.086442	0.039853	-0.058183	-0.097881	-0.125373	0.143240	0.127520
22	-0.044389	-0.103882	0.014766	0.013882	0.056263	0.094697	0.135755
23	-0.095684	0.100300	-0.023364	-0.154943	-0.216924	0.090060	0.338232
24	-0.073675	0.066056	-0.024074	-0.098317	-0.103104	0.005425	0.168156
25	0.031133	-0.099948	-0.024642	0.067055	0.147611	0.131483	0.011700
26	0.082102	-0.018784	-0.020463	0.093192	0.192790	0.095359	-0.096786
27	-0.002265	0.031824	0.066620	-0.094414	-0.057764	-0.003947	0.006671
28	0.175307	-0.046848	0.021145	0.025741	0.064474	0.014812	-0.107256
29	1.000000	-0.074920	0.074623	-0.049759	0.013181	-0.108464	-0.126427
30	-0.074920	1.000000	-0.025034	-0.034220	-0.053459	-0.042200	0.095883
31	0.074623	-0.025034	1.000000	-0.027192	0.048474	-0.006731	-0.018193
32	-0.049759	-0.034220	-0.027192	1.000000	0.543354	0.257754	-0.140930
33	0.013181	-0.053459	0.048474	0.543354	1.000000	0.234307	-0.135576
34	-0.108464	-0.042200	-0.006731	0.257754	0.234307	1.000000	0.044137
35	-0.126427	0.095883	-0.018193	-0.140930	-0.135576	0.044137	1.000000
36	0.025581	-0.201729	-0.037037	0.022836	0.026720	-0.043443	-0.015962
37	0.076602	0.000117	-0.083686	0.032892	0.040900	0.000622	-0.152965
38	0.005973	0.101961	-0.020124	-0.111410	-0.132383	-0.049875	0.091648
39	-0.036882	-0.066394	0.000325	-0.095503	-0.023862	0.046552	0.036918
40	-0.047095	0.069758	-0.057552	-0.206067	-0.231877	0.018793	0.351032
41	-0.013051	0.065534	-0.006149	-0.140144	-0.169485	0.086539	0.219570
42	-0.053935	0.082491	-0.032199	-0.070693	-0.084394	-0.018991	0.206771
43	-0.046848	0.161164	-0.089576	-0.078413	-0.182462	0.021214	0.270944
44	-0.115771	0.045798	-0.004444	-0.157124	-0.061089	-0.035218	0.177159
45	-0.109809	0.114931	-0.007076	-0.223598	-0.263396	0.011342	0.403014
46	-0.064247	0.048047	-0.002964	-0.196982	-0.201624	0.105397	0.357937
47	-0.146176	0.156357	-0.006134	-0.131134	-0.138068	0.002941	0.298803
48	-0.023550	0.064638	-0.058122	-0.096338	-0.139021	0.011505	0.208890
49	-0.067465	0.101296	-0.000066	-0.082266	-0.045442	-0.043129	0.110337
50	-0.073953	0.016685	-0.040054	-0.194405	-0.194245	0.015906	0.363491

SECONDARY PRINCIPALS

CORRELATION MATRIX   ALL VARIABLES

	29	30	31	32	33	34	35
51	-0.049171	0.144744	0.031938	0.005177	-0.032096	-0.026714	0.029878
52	-0.047262	0.184445	-0.066363	-0.107482	-0.159909	-0.044666	0.092602
53	0.058399	-0.028708	-0.049873	-0.126710	-0.092621	0.022312	0.076183
54	-0.007439	-0.049048	0.006150	-0.035300	0.048032	-0.013417	0.023680
55	-0.010042	-0.057749	0.048883	-0.071910	-0.052983	-0.038518	0.110586
56	0.035019	0.108342	-0.077724	-0.184520	-0.178089	-0.017218	0.236129
57	0.000793	0.077405	0.064127	0.041249	-0.004446	-0.089999	0.013734
58	-0.097187	0.086413	0.001253	-0.118923	-0.189949	0.190098	0.350153
59	-0.006436	0.036734	0.043246	-0.027056	-0.009602	0.021708	0.106677
60	-0.008266	-0.011748	0.089285	-0.069500	0.006573	0.064470	0.254166
61	-0.024215	-0.011552	0.018241	-0.132544	-0.082175	0.039111	0.200445
62	-0.082409	0.090828	-0.079892	-0.103229	-0.192110	0.044285	0.414222

SECONDARY PRINCIPALS

CORRELATION MATRIX ALL VARIABLES

	36	37	38	39	40	41	42
1	0.161160	-0.094941	-0.124004	0.202923	-0.030766	-0.029309	-0.037722
2	-0.193019	-0.107354	0.377188	0.069651	0.541865	0.378086	0.429499
3	-0.093361	0.016111	-0.109984	0.043462	0.031997	0.078697	-0.025446
4	-0.040635	-0.059109	0.102399	-0.042803	0.204292	0.190009	0.070797
5	-0.236532	0.055117	0.275904	-0.222959	0.238803	0.140784	0.240663
6	0.036567	-0.201559	0.251988	0.205059	0.517644	0.283903	0.349469
7	0.041140	-0.119812	0.094967	0.043015	0.399670	0.300981	0.206430
8	-0.065644	-0.152925	0.183912	0.025493	0.287418	0.255295	0.208315
9	-0.001842	0.028828	0.028495	0.022215	-0.031284	0.024977	0.033406
10	-0.032042	-0.011279	-0.041678	-0.128449	-0.002384	-0.053200	0.020429
11	-0.118357	-0.074212	0.028238	0.024412	0.186306	0.123843	0.125928
12	0.007143	-0.157586	0.246253	0.070143	0.509422	0.380335	0.337845
13	0.047062	-0.150572	0.197794	0.060946	0.397061	0.283303	0.246740
14	0.005294	-0.118219	0.077229	0.050849	0.075010	0.070812	0.059192
15	0.105297	-0.043647	0.019688	0.102654	0.006709	0.026405	0.011185
16	-0.164189	-0.000626	0.033400	-0.097934	0.214603	0.203189	0.059222
17	-0.111357	0.068884	-0.140152	0.006176	-0.034899	0.118996	-0.020808
18	-0.123222	0.012093	-0.175724	0.048521	-0.135598	0.074808	-0.099761
19	-0.167135	0.021158	-0.105614	0.033811	-0.057446	0.097345	-0.075821
20	-0.046291	-0.127934	0.143180	-0.013306	0.404191	0.323175	0.195605
21	-0.117877	-0.006376	-0.026269	0.089321	0.135648	0.173922	0.018270
22	0.041801	-0.085959	0.057777	0.028359	0.050610	0.002882	0.054659
23	-0.065316	-0.135480	0.249488	0.023701	0.569728	0.383068	0.333063
24	-0.025572	-0.088515	0.112261	-0.017614	0.211113	0.113695	0.115249
25	0.031334	-0.039238	0.010151	0.065590	-0.151842	-0.068977	-0.068713
26	-0.097289	0.048271	-0.009282	-0.015387	-0.166825	-0.072252	-0.069044
27	0.028405	-0.018084	-0.057465	0.027392	-0.004222	0.058063	-0.086971
28	-0.000404	0.039760	0.005345	-0.057363	-0.085793	-0.026911	-0.038200
29	0.025581	0.076602	0.005273	-0.036882	-0.047095	-0.013051	-0.053935
30	-0.201728	0.000117	0.101961	-0.066394	0.069758	0.065534	0.082491
31	-0.037037	-0.083686	-0.020124	0.000325	-0.057552	-0.006149	-0.032199
32	0.022836	0.032892	-0.111410	-0.095503	-0.206067	-0.140144	-0.070693
33	0.026720	0.040900	-0.132383	-0.023862	-0.231877	-0.169485	-0.084394
34	-0.043443	0.000622	-0.049875	0.046552	0.018793	0.086539	-0.018991
35	-0.015962	-0.152965	0.091648	0.036918	0.351032	0.219570	0.206771
36	1.000000	-0.132620	-0.121380	0.079790	-0.088240	-0.053007	-0.061954
37	-0.132620	1.000000	-0.091199	-0.064570	-0.111100	-0.017215	-0.062857
38	-0.121380	-0.091199	1.000000	-0.044474	0.271189	0.159321	0.168785
39	0.079790	-0.064570	-0.044474	1.000000	0.001245	0.009774	0.090724
40	-0.088240	-0.111100	0.271189	0.001245	1.000000	0.521795	0.414517
41	-0.053007	-0.017215	0.159321	0.009774	0.521795	1.000000	0.241569
42	-0.061954	-0.062857	0.168785	0.090724	0.414517	0.241569	1.000000
43	-0.130068	-0.099334	0.353749	0.015085	0.517398	0.310806	0.362728
44	-0.009719	-0.090557	0.169036	0.100578	0.236377	0.183101	0.276237
45	-0.032992	-0.140732	0.262083	0.088949	0.574071	0.373658	0.385728
46	0.041728	-0.098390	0.139092	0.175909	0.452799	0.350005	0.290537
47	-0.169512	-0.134192	0.301664	0.039329	0.525556	0.275226	0.387240
48	0.059345	-0.124139	0.217320	0.115613	0.228625	0.121897	0.154692
49	-0.007950	0.006019	0.211171	-0.076237	0.175007	0.127630	0.162115
50	0.235151	-0.175515	0.220670	0.192230	0.520527	0.352693	0.411025

SECONDARY PRINCIPALS

CORRELATION MATRIX ALL VARIABLES

	36	37	38	39	40	41	42
51	-0.121071	0.054095	0.067993	-0.245964	-0.014798	-0.029149	-0.060506
52	-0.194450	0.117799	0.048945	-0.188561	0.120209	0.096286	0.071680
53	-0.019631	0.073654	0.052739	0.054677	0.156225	0.047596	0.102923
54	-0.016836	0.152295	-0.029026	0.037815	0.105335	0.039513	0.060946
55	0.021631	-0.047651	0.049664	0.162256	0.169187	0.107426	0.129926
56	-0.163143	-0.035686	0.261152	0.036266	0.364719	0.212448	0.268029
57	-0.026709	-0.002372	0.057413	-0.075553	0.005917	-0.018703	0.030937
58	-0.052077	-0.066885	0.123690	0.093493	0.468460	0.487367	0.202929
59	-0.031436	-0.079929	-0.000015	0.061939	0.067277	0.006658	-0.010524
60	0.065121	-0.072621	0.063781	0.007885	0.113436	0.116811	0.108954
61	-0.017051	-0.020574	0.146866	0.096704	0.196149	0.160369	0.175937
62	0.014666	-0.112922	0.263029	0.031253	0.566616	0.374406	0.446902

SECONDARY PRINCIPALS

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CORRELATION MATRIX      ALL VARIABLES

                 43            44            45            46            47            48            49

   1      -0.058235     -0.008990     -0.022813      0.090509      0.021308      0.045529     -0.105631
   2       0.531455      0.399141      0.630579      0.477137      0.559544      0.281516      0.207140
   3      -0.046925     -0.025573      0.038904      0.067820     -0.002464     -0.031934      0.000677
   4       0.086568      0.027347      0.268053      0.194146      0.149354      0.091783      0.116851
   5       0.313919      0.087223      0.197598      0.064414      0.256348      0.280728      0.224053
   6       0.343415      0.380774      0.554925      0.445976      0.457949      0.254452      0.236300
   7       0.301515      0.113366      0.337615      0.343783      0.313285      0.119447      0.151857
   8       0.261225      0.227170      0.290713      0.234167      0.282121      0.189847      0.083240
   9       0.054494     -0.001262     -0.025093      0.019620      0.020758     -0.029395     -0.002408
  10      -0.005934     -0.060878      0.055566      0.012731      0.043349     -0.055514     -0.012917
  11       0.096887     -0.019671      0.358760      0.290782      0.113608      0.020626     -0.048011
  12       0.428792      0.251281      0.642939      0.563956      0.484259      0.220894      0.145050
  13       0.381372      0.310563      0.432289      0.349518      0.326297      0.221049      0.167890
  14       0.135071      0.088975      0.108150      0.089163      0.132040      0.021576      0.043246
  15       0.028196      0.117952      0.040754      0.062542     -0.012741      0.048818      0.012964
  16       0.212337      0.033356      0.205832      0.212205      0.193400      0.034291      0.060855
  17      -0.017781     -0.111478      0.149735      0.181571     -0.017964     -0.055890     -0.137354
  18      -0.133139     -0.171128      0.100712      0.137040     -0.101491     -0.070104     -0.207791
  19      -0.041200     -0.153383      0.145877      0.169133     -0.028253     -0.032287     -0.155334
  20       0.319719      0.184491      0.425792      0.363276      0.298919      0.126415      0.051382
  21       0.130442      0.020124      0.257983      0.266021      0.103425      0.010001     -0.109163
  22       0.094699      0.071927      0.042321      0.026561      0.094683      0.015204      0.001639
  23       0.448075      0.298502      0.573193      0.490419      0.469140      0.193717      0.121676
  24       0.200626      0.138482      0.240784      0.163916      0.172688      0.142010      0.074169
  25      -0.099076      0.029999     -0.060246     -0.027850     -0.115912     -0.041052     -0.129964
  26      -0.121218     -0.030516     -0.125438     -0.162158     -0.140601     -0.100810     -0.092071
  27      -0.088738     -0.045922     -0.033231      0.084414     -0.128740     -0.054196      0.013993
  28      -0.094330     -0.056289     -0.122943     -0.097859     -0.043442     -0.093678     -0.027255
  29      -0.046848     -0.115771     -0.109809     -0.064247     -0.146176     -0.023550     -0.067465
  30       0.161164      0.045798      0.114931      0.048047      0.156357      0.064638      0.101296
  31      -0.089576     -0.004444     -0.007076     -0.002964     -0.006134     -0.058122     -0.000066
  32      -0.078413     -0.157124     -0.223598     -0.196982     -0.131134     -0.096338     -0.082266
  33      -0.182462     -0.061089     -0.263396     -0.201624     -0.138068     -0.139021     -0.045442
  34       0.021214     -0.035218      0.011342      0.105397      0.002941      0.011505     -0.043129
  35       0.270944      0.177159      0.403014      0.357937      0.298803      0.208890      0.110337
  36      -0.130068     -0.009719     -0.032992      0.041728     -0.169512      0.059345     -0.007951
  37      -0.099334     -0.090557     -0.140732     -0.098390     -0.134192     -0.124139      0.006019
  38       0.353749      0.169036      0.262083      0.139092      0.301664      0.217320      0.211171
  39       0.015085      0.100578      0.088949      0.175909      0.039329      0.115613     -0.076237
  40       0.517398      0.236377      0.574071      0.452799      0.525556      0.228625      0.175007
  41       0.310806      0.183101      0.373658      0.350005      0.275226      0.121897      0.127630
  42       0.362728      0.276237      0.385728      0.290537      0.387240      0.154692      0.162115
  43       1.000000      0.241324      0.467326      0.296987      0.489251      0.225598      0.137300
  44       0.241324      1.000000      0.322380      0.258895      0.284150      0.114702      0.147412
  45       0.467326      0.322380      1.000000      0.618275      0.601259      0.229156      0.178379
  46       0.296987      0.258895      0.618275      1.000000      0.331438      0.232330      0.133757
  47       0.489251      0.284150      0.601259      0.331438      1.000000      0.217724      0.129832
  48       0.225598      0.114702      0.229156      0.232330      0.217724      1.000000      0.076693
  49       0.137300      0.147412      0.178379      0.133757      0.129832      0.076693      1.000000
  50       0.354963      0.374699      0.766823      0.683466      0.473287      0.303593      0.166083
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SECONDARY PRINCIPALS

CORRELATION MATRIX   ALL VARIABLES

	43	44	45	46	47	48	49
51	0.052569	-0.122391	-0.068642	-0.067381	-0.007953	-0.084316	0.100916
52	0.157178	-0.078513	0.060078	0.041543	0.083834	-0.047755	0.155380
53	0.134770	0.170924	0.178386	0.100740	0.131305	0.054326	0.018587
54	0.020481	0.131123	0.079221	0.042463	0.064590	0.023575	0.020504
55	0.097367	0.147913	0.242880	0.140708	0.125565	0.056045	0.019534
56	0.344189	0.203937	0.383969	0.216125	0.383813	0.191423	0.098700
57	0.053239	0.003281	-0.132259	-0.112392	0.021189	-0.064513	0.021694
58	0.369687	0.142367	0.549718	0.548394	0.348600	0.194739	0.061027
59	0.051404	0.014687	0.105568	0.181444	0.058268	0.068393	-0.025111
60	0.092764	0.265213	0.155912	0.151806	0.109767	0.084777	0.024941
61	0.171401	0.453579	0.236360	0.210492	0.197252	0.129796	0.031964
62	0.505284	0.373547	0.539737	0.404977	0.489642	0.230149	0.286230

SECONDARY PRINCIPALS

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CORRELATION MATRIX      ALL VARIABLES

                 50          51          52          53          54          55          56

  1        0.071687   -0.194161   -0.432396   -0.103760    0.011619    0.055956   -0.122654
  2        0.561804   -0.051509    0.068207    0.228710    0.173921    0.170357    0.427616
  3        0.023765    0.006523    0.056052    0.002798   -0.008481    0.062947    0.020177
  4        0.216204    0.072944    0.163377    0.014133    0.080975    0.031671    0.200227
  5        0.105642    0.277478    0.264587    0.005001    0.049074   -0.094916    0.220888
  6        0.610970   -0.119326   -0.032772    0.207096    0.145719    0.192329    0.307790
  7        0.337120    0.116636    0.316436    0.085872    0.052211   -0.076510    0.113054
  8        0.288179   -0.013873    0.048511    0.043938    0.055965    0.110250    0.286179
  9       -0.019275    0.125018    0.006395   -0.045288   -0.021417   -0.101547   -0.044058
 10       -0.009690    0.106719    0.032246   -0.086395   -0.059247   -0.017283   -0.098213
 11        0.255988    0.003037    0.131615   -0.001821   -0.078040    0.104393    0.174672
 12        0.652520    0.018557    0.149216    0.094125    0.019467    0.163220    0.342844
 13        0.403391   -0.039642    0.083120    0.072835   -0.017470    0.121114    0.229797
 14        0.085892   -0.004908    0.018928   -0.029086   -0.063858    0.035710    0.126345
 15        0.079837   -0.100783   -0.156543   -0.001601    0.009187    0.050528    0.005357
 16        0.126784    0.050852    0.140929   -0.002655   -0.055049    0.083965    0.135206
 17        0.102270   -0.031380    0.061605   -0.118990   -0.092281    0.050390   -0.027084
 18        0.047842   -0.034186    0.033799   -0.149036   -0.125155    0.031643   -0.078239
 19        0.084696    0.026778    0.139326   -0.102554   -0.087263    0.022576   -0.010898
 20        0.364071    0.004464    0.056248    0.035466    0.040789    0.057177    0.168675
 21        0.199127   -0.094835    0.073935    0.021435   -0.063963    0.134288    0.112961
 22        0.056421   -0.058354   -0.021879    0.006111   -0.005452   -0.024361    0.075826
 23        0.538853    0.037581    0.185852    0.209173    0.059984    0.122105    0.368938
 24        0.216912   -0.035484    0.092075    0.108064    0.030386    0.056954    0.217564
 25       -0.052797   -0.186283   -0.256583    0.133547    0.034649    0.062330    0.036931
 26       -0.158016   -0.074882   -0.131501    0.090918    0.029023    0.031944   -0.034117
 27       -0.003352    0.056149    0.083163   -0.021478   -0.059145    0.009725   -0.114627
 28       -0.111868    0.012955    0.021521   -0.172807   -0.102389   -0.055452   -0.027390
 29       -0.073953   -0.049171   -0.047262    0.058399   -0.007439   -0.010042    0.035019
 30        0.016685    0.144744    0.184445   -0.028708   -0.049048   -0.057749    0.108342
 31       -0.040054    0.031938   -0.066363   -0.049873    0.006150    0.048883   -0.077724
 32       -0.194405    0.005177   -0.107482   -0.126710   -0.035300   -0.071910   -0.184520
 33       -0.194245   -0.032096   -0.159909   -0.092621    0.048032   -0.052983   -0.178089
 34        0.015906   -0.026714   -0.044666    0.022312   -0.013417   -0.038518   -0.017218
 35        0.363491    0.029878    0.092602    0.076183    0.023680    0.110586    0.236129
 36        0.235151   -0.121073   -0.194450   -0.019631   -0.016837    0.021631   -0.163143
 37       -0.175515    0.054095    0.117799    0.073654    0.152295   -0.047651   -0.035686
 38        0.220670    0.067993    0.048945    0.052739   -0.029026    0.049664    0.261152
 39        0.192230   -0.245964   -0.188561    0.054677    0.037815    0.162256    0.036266
 40        0.520527   -0.014798    0.120209    0.156225    0.105335    0.169187    0.364719
 41        0.352693   -0.029150    0.096286    0.047596    0.039513    0.107426    0.212448
 42        0.411025   -0.060506    0.071680    0.102923    0.060946    0.129926    0.268029
 43        0.354963    0.052569    0.157178    0.134770    0.020481    0.097367    0.344189
 44        0.374699   -0.122391   -0.078513    0.170924    0.131123    0.147913    0.203937
 45        0.766823   -0.068642    0.060078    0.178386    0.079221    0.242880    0.383969
 46        0.683466   -0.067381    0.041543    0.100740    0.042463    0.140708    0.216125
 47        0.473287   -0.007953    0.083834    0.131305    0.064590    0.125565    0.383813
 48        0.303593   -0.084316   -0.047755    0.054326    0.023575    0.056045    0.191423
 49        0.166083    0.100917    0.155380    0.018587    0.020504    0.019534    0.098700
 50        1.000000   -0.148927   -0.007803    0.142491    0.084580    0.220499    0.329031
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SECONDARY PRINCIPALS

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CORRELATION MATRIX      ALL VARIABLES

                    50            51            52            53            54            55            56

   51          -0.148927      1.000000      0.414228     -0.093503     -0.113037     -0.288694     -0.040619
   52          -0.007803      0.414228      1.000000      0.046569     -0.100663     -0.217146      0.042719
   53           0.142491     -0.093503      0.046569      1.000000      0.528201      0.141503      0.221703
   54           0.084580     -0.113037     -0.100663      0.528201      1.000000      0.088735      0.135485
   55           0.220499     -0.288694     -0.217146      0.141503      0.088735      1.000000      0.189033
   56           0.329031     -0.040619      0.042719      0.221703      0.135485      0.189033      1.000000
   57          -0.143612      0.161636      0.095697      0.056790      0.040632     -0.127693      0.021522
   58           0.475512     -0.028773      0.079620      0.052517     -0.009755      0.146086      0.233742
   59           0.125670      0.067281     -0.033558     -0.055720     -0.033984     -0.083632     -0.037857
   60           0.123409     -0.050327     -0.057351      0.103210      0.052015      0.096524      0.097890
   61           0.227615     -0.111966     -0.111704      0.186158      0.128356      0.188002      0.183642
   62           0.496470     -0.007477      0.102219      0.186645      0.087332      0.167013      0.292636
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SECONDARY PRINCIPALS

CORRELATION MATRIX ALL VARIABLES

	57	58	59	60	61	62
1	-0.083117	0.091220	0.105893	0.030426	-0.005516	-0.044524
2	0.006793	0.452416	0.038176	0.180103	0.331059	0.546600
3	-0.141754	0.101944	0.003635	-0.107105	-0.009244	-0.107840
4	-0.159352	0.252402	0.064353	0.059588	0.107734	0.101165
5	0.105837	0.071335	0.034270	0.046052	0.066443	0.290484
6	0.000862	0.306055	0.036145	0.143957	0.252897	0.440037
7	-0.006254	0.334066	0.141281	0.042686	0.069060	0.308440
8	0.016555	0.229205	0.058714	0.084169	0.186251	0.301630
9	0.121715	0.044085	0.043853	0.005926	-0.060263	0.010217
10	-0.051072	0.055158	0.016310	0.051492	-0.042199	0.014632
11	-0.203389	0.391808	0.140377	0.093768	0.051715	0.114971
12	-0.079177	0.526702	0.101856	0.166992	0.236275	0.446071
13	-0.012165	0.323299	0.021179	0.261908	0.320050	0.441838
14	-0.065452	0.129044	0.074952	0.162576	0.165758	0.153502
15	-0.034754	0.023675	0.057309	0.142113	0.170007	0.090384
16	-0.052367	0.413430	0.034678	0.083413	0.083655	0.171321
17	-0.173435	0.336716	0.135890	0.079306	-0.062408	-0.020905
18	-0.257940	0.310484	0.196110	0.007922	-0.084480	-0.175824
19	-0.183460	0.360999	0.194330	0.013772	-0.062983	-0.108111
20	-0.008022	0.422081	0.136441	0.139725	0.127964	0.328393
21	-0.178797	0.381802	0.069600	0.035259	0.069744	0.078052
22	-0.009992	0.048923	0.050326	0.165721	0.144023	0.103580
23	0.035076	0.462651	0.052391	0.149096	0.258853	0.483939
24	-0.013620	0.203458	0.065636	0.141811	0.176866	0.271195
25	0.015369	-0.102201	-0.046558	0.111283	0.110150	-0.086035
26	0.007204	-0.166634	-0.084605	0.040847	0.015302	-0.135010
27	-0.018363	0.055805	0.007017	0.000430	0.027894	-0.031371
28	0.012093	-0.130826	0.013207	0.024260	-0.069737	-0.086968
29	0.000793	-0.097187	-0.006436	-0.008266	-0.024215	-0.082409
30	0.077405	0.086413	0.036734	-0.011748	-0.011552	0.090828
31	0.064127	0.001253	0.043246	0.089285	0.018241	-0.079892
32	0.041249	-0.118923	-0.027056	-0.069500	-0.132544	-0.103229
33	-0.004446	-0.189949	-0.009602	0.006573	-0.082175	-0.192110
34	-0.089999	0.190098	0.021708	0.064470	0.039111	0.044285
35	0.013734	0.350153	0.106677	0.254166	0.200445	0.414222
36	-0.026709	-0.052077	-0.031436	0.065121	-0.017051	0.014666
37	-0.002372	-0.066885	-0.079929	-0.072621	-0.020574	-0.112922
38	0.057413	0.123691	-0.000015	0.063781	0.146866	0.263029
39	-0.075553	0.093493	0.061939	0.007885	0.096704	0.031253
40	0.005917	0.468460	0.067277	0.113436	0.196149	0.566616
41	-0.018703	0.487367	0.006658	0.116811	0.160369	0.374406
42	0.030937	0.202929	-0.010524	0.108954	0.175937	0.446902
43	0.053239	0.369687	0.051404	0.092764	0.171401	0.505284
44	0.003281	0.142367	0.014687	0.265213	0.453579	0.373547
45	-0.132259	0.549718	0.105568	0.155912	0.236360	0.539737
46	-0.112592	0.548394	0.181444	0.151806	0.210492	0.404977
47	0.021189	0.348601	0.058268	0.109767	0.197252	0.489642
48	-0.064513	0.194739	0.068393	0.084777	0.129796	0.230149
49	0.021694	0.061027	-0.025111	0.024941	0.031964	0.286230
50	-0.143612	0.475512	0.125670	0.123409	0.227615	0.496470

SECONDARY PRINCIPALS

```
CORRELATION MATRIX       ALL VARIABLES

                      57            58            59            60            61            62

   51           0.161636     -0.028772      0.067281     -0.050327     -0.111966     -0.007477
   52           0.095697      0.079620     -0.033558     -0.057351     -0.111704      0.102219
   53           0.056790      0.052517     -0.055720      0.103210      0.186158      0.186645
   54           0.040632     -0.009755     -0.033984      0.052015      0.128356      0.087332
   55          -0.127693      0.146086     -0.083632      0.096524      0.188002      0.167013
   56           0.021522      0.233742     -0.037857      0.097890      0.183642      0.292636
   57           1.000000     -0.123146     -0.145616      0.023675     -0.050690      0.055810
   58          -0.123146      1.000000      0.228935      0.175117      0.191290      0.419112
   59          -0.145616      0.228935      1.000000      0.023266      0.005920      0.011094
   60           0.023675      0.175117      0.023266      1.000000      0.636662      0.264452
   61          -0.050690      0.191290      0.005920      0.636662      1.000000      0.316828
   62           0.055810      0.419112      0.011094      0.264452      0.316828      1.000000
```

APPENDIX XI

Intercorrelations of School, Student Aggregate and Teacher Aggregate Variables

This appendix gives the correlation matrices for the School, Student aggregate and Teacher aggregate variables used at each grade level. These correlations were obtained by reformatting matrices based upon unequal numbers of observations. The limit for the missing observation correlation program was 59 variables. Since there were more than 59 variables at each grade level a basic set of variables was defined for each grade level. This basic set plus other variables of interest to a total of 59 are presented as set 1. Set 2 usually contains the correlations of the remaining variables (viz. those variables that could not be included in set 1) with the basic set plus the correlations of the remaining variables with one another. For example, if we had a total of 74 variables and a basic set of 43 variables then set 1 would contain the intercorrelations of the basic set plus 16 other variables. Set 2 would contain the correlations of the remaining 15 variables with the basic set and with one another. However, the intercorrelations of the basic set would not be repeated in set 2.

The number of sample schools included at each grade level and their inflated number using the school sampling weights were:

Grade Level	Sample Number	Inflated Number
Twelfth	780	26332
Ninth	923	20561
Sixth	2372	54568
Third	2453	56834
First	1302	60770*

For each grade level the variable title and its acronym is given. A P before the acronym indicates that the variable was derived from the Principal's questionnaire, T that the variable came from the Teacher's questionnaire and, S that the variable came from the Student questionnaire. For example, PPLNT indicates the variable or index of the school's plant and physical facilities, TEXP indicates the index of the teacher's experience and, SSES indicates the student body's Socio-Economic Status.

Definitions of each variable are given in chapters three, four and five.

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*The inflated values for the first grade should be doubled in the following section to obtain a more accurate estimate.

Twelfth Grade School, Teacher Aggregate and Student Aggregate Intercorrelations

There were more variables at the twelfth grade than at the other grade levels because of the five additional outcome measures. Consequently the basic set was comprised of 48 variables and there are three sets rather than 2 sets as for the other grade levels. The first 48 variables in the following list comprise the basic set.

NO.	ACRONYM	TITLE
1	PPLNT	Plant and Physical Facilities
2	PEXP	Principal's Experience
3	PTRNG	Principal's Training
4	PCOLAT	Principal's College Attended
5	PINSTF	Instructional Facilities
6	PSPST	Specialized Staff and Services
7	PTRCK	Tracking and Ability Grouping
8	PTSTG	Testing
9	PTRNS	Transfers
10	PREMD	Remedial Programs
11	PFLUN	Free Milk and Lunch Programs
12	PACRD	Accreditation
13	PAGTXT	Age of Texts
14	PAVTXT	Availability of Texts
15	PTOVOC	Percent Graduates to Post-Secondary Vocational
16	PRURUB	Rural-Urban Location of School
17	PTOCOL	Percent Graduates to College

NO.	ACRONYM	TITLE
18	PNTOCOL	Percent Non-White Graduates to College
19	PNTOVOC	Percent Non-White Graduates to Post-Secondary Vocational
20	PGDROP	Percent Girl Dropouts
21	PPTRAT	Pupil Teacher Ratio
22	PENRL	Number of Students Enrolled
23	PAGBLD	Age of Building
24	PPUPRM	Pupils Per Room
25	PSEX	Principal's Sex
26	PSREP	Principal's Estimate School Reputation
27	PBDROP	Percent Boy Dropouts
28	TEXP	Teacher's Experience
29	TCOND	Teaching Conditions
30	TLOC	Teacher's Localism of Background
31	TSESB	Teacher's Socio-Economic Background
32	TTRNG	Teacher's Training
33	TCOLAT	Teacher's College Attended
34	TRELAC	Teaching Related Activities
35	TPRHAB	Teacher's Preference for Student Ability Level
36	TSEX	Teacher's Sex
37	TRACE	Teacher's Racial-Ethnic Group Membership
38	TSAL	Teacher's Annual Teaching Salary
39	TVOCAB	Teacher's Vocabulary
40	SEXPTN	Student's Expectaion

NO.	ACRONYM	TITLE
41	SSES	Student's Socio-Economic Status
42	SATTUD	Student's Attitude Toward Life
43	SFSS	Student's Family Structure and Stability
44	SEDPLN	Student's Educational Plans and Desires
45	SHBTS	Student's Study Habits
46	SACHV	Student's Achievement
47	SSEX	Student's Sex
48	SRETHC	Student's Racial-Ethnic Group Membership
49	PPTA	Principal's Estimate of PTA Attendance
50	PTURN	Teacher Turnover
51	PTENR	Teacher Tenure
52	PTEXM	Teacher Examinations
53	PNWENT	Length of Time Since Non-Whites Entered
54	PHMWK	Hours of Homework Expected
55	TWHUND	Percent White of Students at Teacher's Undergraduate Institution
56	TWHITE	Percent White of Students in Teacher's Class
57	SSOCON	Student's Social Confidence
58	SPTA	Student's Parents PTA Attendance
59	SKGTN	Student's Kindergarten Attendance
SET 2		
49	PCOMPL	Compulsory Attendance Law
50	PSES	Principal's Estimate of Student Body's SES
51	PASGN	Pupil Assignment
52	PDATTN	Percent Daily Attendance

NO.	ACRONYM	TITLE
53	PWHITE	Principal's Estimate of Percent White of Student Body
54	PPROB	Principal's Estimate of School Problems
55	PPRSLR	Promotion Policy
56	PCRED	Principal's Credits Beyond Highest Degree
57	TCRED	Teacher's Credits Beyond Highest Degree
58	TASGN	Teacher's Assignment to Present School
59	TINST	Teacher Attends Summer Institutes
SET 3		
49	THONOR	Teacher Member National Honorary
50	THRTCH	Teacher's Hours a Day Spent in Classroom Teaching
51	TSIZE	Average Class Size
52	SAGE	Student's Age
53	SFORPT	Student's Parents Speaks a Foreign Language
54	SFORST	Student Speaks a Foreign Language Outside of School

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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                            12TH GRADE - SET 1, 59

SELECTED VARIABLE


THE NUMBER OF OBSERVATIONS IS      26332.

VARIABLE          SUMS        SUMS OF SQUARES           MEAN           SIGMA(N)          SIGMA(N-1)
PPLNT          3960.2745         86567.2832            0.1504            1.8069              1.8069
PEXP           5840.9287        105960.8115            0.2218            1.9937              1.9937
PTRNG         -7032.3690         38660.4971           -0.2671            1.1819              1.1819
PCOLAT         1811.7088         27245.3062            0.0688            1.0149              1.0149
PINSTF        21538.1548        191118.7539            0.8180            2.5669              2.5670
PSPST        -26621.8557        267692.1758           -1.0110            3.0239              3.0240
PTRCK        -17123.3025        180169.6758           -0.6503            2.5337              2.5337
PTSTG          6589.6790         51109.6382            0.2503            1.3705              1.3706
PTRNS         -5609.8097         34508.3711           -0.2130            1.1248              1.1248
PREMD         -5423.9371         41825.0884           -0.2060            1.2434              1.2434
PFLUN          1618.9616         33458.7168            0.0615            1.1256              1.1256
PACRD          3468.4132         17855.3799            0.1317            0.8129              0.8129
PAGTXT         6092.3315         33953.5864            0.2314            1.1117              1.1117
PAVTXT          880.4990         25135.6201            0.0334            0.9765              0.9765
PTOVOC         -935.4620         14762.1666           -0.0355            0.7479              0.7479
PRURUB        -8204.7234         17590.8491           -0.3116            0.7556              0.7556
PTOCOL         2333.6092         18894.1150            0.0886            0.8424              0.8424
PNTCOL         1748.7318         18526.1011            0.0664            0.8362              0.8362
PNTVOC         1410.4237         12685.5035            0.0536            0.6920              0.6920
PGDROP        -2502.0907         17615.2485           -0.0950            0.8124              0.8124
PPTRAT       -10888.8754         51510.4878           -0.4135            1.3361              1.3361
PENRL         -5789.5252         19922.0674           -0.2199            0.8416              0.8416
PAGBLD         2344.0976         21390.1550            0.0890            0.8969              0.8969
PPUPRM        -6321.3762         23867.4463           -0.2401            0.9213              0.9213
PSEX             84.4434         20270.4236            0.0032            0.8774              0.8774
PSREP         -3013.8034         20543.9119           -0.1145            0.8758              0.8759
PBDROP        -3171.4151         17300.3035           -0.1204            0.8016              0.8016
TEXP          -8079.2200         28025.9558           -0.3068            0.9850              0.9850
TCOND         -3024.0065         75336.5645           -0.1148            1.6876              1.6876
TLOC           3779.4478         32501.6333            0.1435            1.1017              1.1017
TSESB        -11179.4510         20347.4768           -0.4246            0.7697              0.7697
TTRNG        -18334.3586         32459.0642           -0.6963            0.8648              0.8648
TCOLAT       -11301.3561         26181.7017           -0.4292            0.9001              0.9001
TRELAC         2532.1241          8127.1031            0.0962            0.5472              0.5472
TPRHAB        -6799.0124          7881.3704           -0.2582            0.4823              0.4823
TSEX           -822.4178          3168.5263           -0.0312            0.3455              0.3455
TRACE          6560.7245         26504.2371            0.2492            0.9718              0.9719
TSAL         -11247.3079         12895.8964           -0.4271            0.5543              0.5544
TVOCAB        -2102.3906          6864.5825           -0.0798            0.5043              0.5043
SEXPTN        -2011.8099          9358.1669           -0.0764            0.5912              0.5912
SSES         -17849.4131         47861.7568           -0.6779            1.1654              1.1654
SATTUD       -19618.2983        106190.1016           -0.7450            1.8649              1.8649
SFSS          -2791.6657         15197.9363           -0.1060            0.7523              0.7523
SEDPLN       -11424.9883         34578.5356           -0.4339            1.0606              1.0606
SHBTS         -9019.6849         28529.1829           -0.3425            0.9829              0.9829
SACHV         -8531.0027        123982.7021           -0.3240            2.1456              2.1456
```

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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                  12TH GRADE - SET 1, 59

SELECTED VARIABLE


THE NUMBER OF OBSERVATIONS IS      26332.

VARIABLE          SUMS         SUMS OF SQUARES          MEAN           SIGMA(N)        SIGMA(N-1)
SSEX           -357.8524          2778.5063           -0.0136           0.3246           0.3246
SRETHC         -337.3701         18593.9460           -0.0128           0.8402           0.8402
PPTA          -1263.7901         22463.5359           -0.0480           0.9224           0.9224
PTURN          5533.8558         26196.7080            0.2102           0.9750           0.9751
PTENR         -4260.6018         21203.6694           -0.1618           0.8826           0.8827
PTEXM         -1517.0115         16085.5101           -0.0576           0.7795           0.7795
PNWENT        -3982.9906         15532.4526           -0.1513           0.7530           0.7530
PHMWK         -1225.8407         19462.4968           -0.0466           0.8585           0.8585
TWHUND         1266.3028         19390.3989            0.0481           0.8568           0.8568
TWHITE         4786.4759         17052.7781            0.1818           0.7839           0.7840
SSOCON       -45599.6055        376253.9648           -1.7317           3.3601           3.3601
SPTA            457.0673          5665.4935            0.0174           0.4635           0.4635
SKGTN         -9656.0444         16168.7017           -0.3667           0.6925           0.6925
```

FACTOR ANALYSIS - MERGED DATA
12TH GRADE

12TH GRADE - SET 1, 59

CORRELATION MATRIX SELECTED VARIABLE

	PPLNT	PEXP	PTRNG	PCOLAT	PINSTF	PSPST
PPLNT	1.000000	-0.077768	0.094780	0.174657	0.290718	0.174109
PEXP	-0.077768	1.000000	0.091660	-0.024640	0.009015	-0.095481
PTRNG	0.094780	0.091660	1.000000	0.058895	0.433603	0.621485
PCOLAT	0.174657	-0.024640	0.058895	1.000000	0.061194	0.032424
PINSTF	0.290718	0.009015	0.433603	0.061194	1.000000	0.614668
PSPST	0.174109	-0.095481	0.621485	0.032424	0.614668	1.000000
PTRCK	0.063353	-0.114821	0.262575	-0.063612	0.320020	0.363426
PTSTG	0.014729	0.028105	-0.321834	0.103671	-0.186445	-0.193073
PTRNS	0.118386	-0.143025	0.134951	-0.010107	0.135972	0.181343
PREMD	0.021122	0.053970	0.226990	-0.039225	0.166308	0.252429
PFLUN	0.123883	-0.043457	-0.132941	0.045233	-0.193665	-0.146877
PACRD	0.058366	-0.140646	0.004646	-0.056122	0.288781	0.175703
PAGTXT	-0.114502	0.000905	-0.089744	-0.053438	-0.197165	-0.198155
PAVTXT	-0.103210	0.170076	-0.039172	-0.131109	0.114733	-0.027426
PTOVOC	0.133279	-0.117470	0.104168	0.025510	0.205211	0.198446
PRURUB	0.066173	0.016982	0.442332	-0.150062	0.355048	0.628784
PTOCOL	0.236680	-0.037235	0.083330	0.139185	0.236731	0.153806
PNTCOL	-0.001128	0.005742	0.129618	0.009202	0.084767	0.106415
PNTVOC	-0.038444	0.024356	0.023160	0.031643	-0.020880	0.064591
PGDROP	-0.085948	-0.102119	0.182992	0.032779	0.015278	0.157178
PPTRAT	-0.046513	-0.007037	-0.027214	-0.119006	-0.020550	0.059545
PENRL	0.145508	-0.009337	0.522293	-0.073934	0.497361	0.740326
PAGBLD	-0.052621	-0.003482	-0.200835	0.116138	-0.201199	-0.137368
PPUPRM	-0.009432	-0.185147	0.022698	-0.024598	0.105567	0.244138
PSEX	-0.120926	-0.008807	-0.216192	-0.072486	-0.086365	-0.045296
PSREP	0.135406	-0.001197	0.109341	-0.009269	0.408863	0.312491
PBDROP	-0.068378	-0.118810	0.196084	-0.018695	0.022338	0.170563
TEXP	0.020197	0.212183	0.189384	-0.086340	0.104407	0.150130
TCOND	0.266966	-0.051309	-0.080527	0.180824	0.110348	0.056656
TLOC	-0.047443	-0.062539	-0.124306	0.108949	0.058439	-0.003637
TSESB	-0.060562	-0.053385	0.278607	0.045522	0.218115	0.300324
TTRNG	0.106391	0.045031	0.504080	-0.052407	0.371092	0.545081
TCOLAT	-0.116330	-0.032479	0.026502	0.162246	0.191934	0.098581
TRELAC	0.067810	0.067938	-0.167347	0.055587	0.010404	-0.053455
TPRHAB	-0.004625	-0.049750	0.104075	0.027381	0.185246	0.109177
TSEX	-0.050166	0.072037	0.012340	-0.142225	-0.079031	-0.010946
TRACE	0.066514	-0.111689	0.025984	0.145176	0.169095	0.030867
TSAL	0.074624	0.033996	0.527534	0.114139	0.426410	0.601692
TVOCAB	-0.000832	-0.070385	0.161513	0.184334	0.229219	0.245934
SEXPTN	0.029132	-0.003717	-0.114512	-0.147650	-0.165191	-0.160519
SSES	0.140263	-0.056212	0.164937	0.125960	0.440842	0.338549
SATTUD	0.073786	-0.017362	-0.067443	0.064869	0.057819	-0.052004
SFSS	0.108115	-0.065350	-0.096470	0.122827	0.068293	-0.049571
SEDPLN	0.154010	0.003769	0.033182	0.028898	0.156712	0.095589
SHBTS	0.097529	0.003243	-0.088079	-0.029223	0.053290	-0.026988
SACHV	0.111548	-0.049030	0.062686	0.142359	0.300929	0.181121
SSEX	0.069070	-0.018967	-0.029368	0.122508	-0.025339	-0.066383
SRETHC	0.056985	-0.098959	0.011971	0.098962	0.144445	0.035584
PPTA	0.089726	0.003513	-0.060051	-0.166048	0.007579	0.060588
PTURN	-0.159066	-0.142407	-0.099102	0.102788	-0.045940	-0.217094

```
FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                    12TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                     PPLNT        PEXP        PTRNG       PCOLAT       PINSTF       PSPST        PTRCK

PTENR            -0.214133    0.076168    0.278633    -0.234287     0.067650     0.320778     0.161525
PTEXM             0.025387   -0.028626    0.101612    -0.023637     0.036863     0.137280     0.108713
PNWENT           -0.022918   -0.110970    0.336901     0.003260     0.282306     0.412790     0.159497
PHMWK             0.143899   -0.120748    0.185820    -0.036439     0.114899     0.223113     0.185203
TWHUND            0.079556   -0.119261    0.012219     0.148235     0.143025     0.014102    -0.079595
TWHITE            0.043977   -0.068553   -0.062365     0.125746     0.097282    -0.061320    -0.098852
SSOCON            0.060439   -0.011365   -0.046714     0.023668     0.047561    -0.047873    -0.054850
SPTA              0.049444    0.000578   -0.080162     0.069524    -0.043495    -0.092542    -0.084139
SKGTN             0.012000   -0.012160    0.235187     0.163465     0.318047     0.467449     0.082567
```

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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                     12TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                  PTSTG        PTRNS        PREMD        PFLUN        PACRD       PAGTXT       PAVTXT

PPLNT          0.014729     0.118386     0.021122     0.123883     0.058366    -0.114502    -0.103210
PEXP           0.028105    -0.143025     0.053970    -0.043457    -0.140646     0.000905     0.170076
PTRNG         -0.321834     0.134951     0.226990    -0.132941     0.004646    -0.089744    -0.039172
PCOLAT         0.103671    -0.010107    -0.039225     0.045233    -0.056122    -0.053438    -0.131109
PINSTF        -0.186445     0.135972     0.166308    -0.193665     0.288781    -0.197165     0.114733
PSPST         -0.193073     0.181343     0.252429    -0.146877     0.175703    -0.198155    -0.027426
PTRCK         -0.201826     0.107459     0.305600    -0.078327     0.091923    -0.128423    -0.123864
PTSTG          1.000000    -0.079954    -0.125726     0.236614    -0.032287     0.029723    -0.112045
PTRNS         -0.079954     1.000000     0.064557    -0.002780     0.135094    -0.130912    -0.089891
PREMD         -0.125726     0.064557     1.000000    -0.042727     0.053808    -0.125839    -0.000601
PFLUN          0.236614    -0.002780    -0.042727     1.000000    -0.135875     0.134405    -0.128114
PACRD         -0.032287     0.135094     0.053808    -0.135875     1.000000    -0.080963    -0.043606
PAGTXT         0.029723    -0.130912    -0.125839     0.134405    -0.080963     1.000000     0.074359
PAVTXT        -0.112045    -0.089891    -0.000601    -0.128114    -0.043606     0.074359     1.000000
PTOVOC         0.101682     0.185231    -0.033799     0.127220     0.043600     0.006863    -0.116980
PRURUB        -0.297347     0.216587     0.192239    -0.163730     0.209993    -0.233882    -0.003265
PTOCOL        -0.009863    -0.012949     0.072170     0.051485     0.115906    -0.060257     0.148882
PNTCOL        -0.082405     0.013569     0.063920    -0.010597     0.143955    -0.152189    -0.132660
PNTVOC         0.072285     0.003383    -0.036521     0.144742     0.041482    -0.145656    -0.110472
PGDROP        -0.065948     0.077257     0.118668    -0.063616     0.031179    -0.068778    -0.197508
PPTRAT         0.116525     0.090487    -0.022329     0.039164     0.069956    -0.030801    -0.197288
PENRL         -0.224872     0.223542     0.228857    -0.193796     0.170572    -0.207471    -0.075431
PAGBLD         0.249393    -0.104376    -0.043342     0.184637     0.032556     0.194646    -0.100252
PPUPRM         0.132592     0.050996    -0.011020     0.017317     0.124431    -0.129812    -0.158941
PSEX           0.092822     0.151946    -0.048704     0.045850     0.103346     0.033245     0.002959
PSREP         -0.127231     0.050412     0.148227    -0.162029     0.264137    -0.289180    -0.001210
PBDROP        -0.073840     0.045674     0.159105    -0.050983     0.013428    -0.062448    -0.208333
TEXP           0.075809    -0.090131     0.039523    -0.017136     0.114981     0.001508     0.024013
TCOND          0.110500    -0.049910    -0.032094     0.112667     0.076181    -0.104309     0.052719
TLOC           0.055326     0.009392     0.092405    -0.021151     0.115176     0.008934     0.179994
TSESB         -0.170067     0.060951    -0.007527    -0.069961    -0.016697     0.022521     0.049729
TTRNG         -0.143375     0.109820     0.171500    -0.108574     0.241568    -0.060983    -0.083786
TCOLAT         0.036344     0.035563     0.036391     0.056354     0.138904    -0.010272     0.099415
TRELAC         0.303875    -0.083672     0.026894     0.059455     0.116732    -0.002644    -0.025353
TPRHAB        -0.079427     0.060589     0.121616    -0.060092     0.086076    -0.081300     0.092960
TSEX           0.047006    -0.040520    -0.165341     0.027334    -0.112533     0.118113     0.072128
TRACE         -0.048159     0.020247    -0.014064     0.000094     0.170410     0.028551     0.118677
TSAL          -0.199958     0.080275     0.249174    -0.103290     0.162399    -0.117142    -0.021085
TVOCAB         0.003513    -0.000790     0.079416    -0.028162     0.145245    -0.025762     0.146781
SEXPTN        -0.009452     0.078417    -0.008622    -0.091897    -0.055234    -0.147665    -0.000596
SSES          -0.036966     0.077156     0.059980    -0.121184     0.252489    -0.058830     0.194362
SATTUD        -0.056900     0.032908    -0.000405    -0.002745     0.087947    -0.043354     0.167212
SFSS           0.012060    -0.016078    -0.042750    -0.037780     0.061383    -0.019474     0.146637
SEDPLN        -0.039512     0.140263     0.068185    -0.037882     0.112381    -0.120727     0.091134
SHBTS          0.040238     0.022807     0.007918    -0.018124     0.109590    -0.071363     0.085183
SACHV         -0.016879     0.080364     0.004615    -0.004334     0.168521    -0.010167     0.194049
SSEX           0.065864    -0.002816    -0.059596     0.031299     0.010038    -0.034607     0.033469
SRETHC        -0.013475     0.020108    -0.040745    -0.014958     0.131957     0.044308     0.109828
PPTA           0.139593     0.181518    -0.104269     0.170971     0.015274     0.154521    -0.000665
PTURN          0.029994    -0.005311    -0.064372     0.174768    -0.081161     0.242941     0.113158
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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                      12TH GRADE - SET 1, 59

CORRELATION MATRIX       SELECTED VARIABLE

                      PTSTG          PTRNS          PREMD          PFLUN          PACRD          PAGTXT         PAVTXT

PTENR             -0.040049      -0.053823       0.079528      -0.006822      -0.036992       0.046780       0.059310
PTEXM             -0.102045       0.093491       0.033435      -0.026575      -0.085914      -0.157466      -0.007807
PNWENT            -0.306354       0.148799       0.125128      -0.067954       0.128101      -0.039280       0.003102
PHMWK             -0.212982       0.059385       0.138945      -0.004487       0.079744      -0.047903      -0.027432
TWHUND            -0.034078       0.031305      -0.001785      -0.010567       0.140258       0.011161       0.135105
TWHITE             0.017579       0.005004      -0.033927      -0.051345       0.117833       0.054050       0.134705
SSOCON            -0.074129       0.031963      -0.005926      -0.052515       0.099027      -0.078215       0.141295
SPTA              -0.020853      -0.032859       0.012987       0.130198      -0.018970       0.005275       0.051764
SKGTN              0.078936      -0.054726       0.117724      -0.034853       0.069822      -0.039472       0.059336
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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                              12TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                      PTOVOC          PRURUB          PTOCOL          PNTCOL          PNTVOC          PGDROP          PPTRAT

PPLNT               0.133279        0.066173        0.236680       -0.001128       -0.038444       -0.085948       -0.046513
PEXP               -0.117470        0.016982       -0.037233        0.005742        0.024350       -0.102119       -0.007037
PTRNG               0.104168        0.442332        0.083330        0.129618        0.023160        0.182992       -0.027214
PCOLAT              0.025510       -0.150062        0.139185        0.009202        0.031643        0.032779       -0.119006
PINSTF              0.205211        0.355048        0.236731        0.084767       -0.020880        0.015278       -0.020550
PSPST               0.198446        0.528784        0.153806        0.106415        0.064591        0.157178        0.059545
PTRCK               0.184989        0.292012       -0.087305        0.141187        0.080928        0.148625        0.181051
PTSTG               0.101682       -0.297347       -0.009863       -0.082405        0.072285       -0.065948        0.116525
PTRNS               0.185231        0.216587       -0.012949        0.013569        0.003383        0.077257        0.090487
PREMD              -0.033799        0.192239        0.072170        0.063920       -0.036521        0.118668       -0.022329
PFLUN               0.127220       -0.163730        0.051485       -0.010597        0.144742       -0.063616        0.039164
PACRD               0.043600        0.209993        0.115906        0.143955        0.041482        0.031179        0.069936
PAGTXT              0.006863       -0.233882       -0.060257       -0.152189       -0.145656       -0.068778       -0.030801
PAVTXT             -0.116960       -0.003263        0.148882       -0.132660       -0.110472       -0.197508       -0.197288
PTOVOC              1.000000        0.016006       -0.042324        0.012015        0.149369       -0.025686        0.184306
PRURUB              0.016006        1.000000        0.095389        0.076230        0.089493        0.232494        0.153303
PTOCOL             -0.042324        0.095389        1.000000        0.111368        0.045710       -0.237554       -0.134927
PNTCOL              0.012015        0.076230        0.111368        1.000000        0.511624        0.069615        0.085229
PNTVOC              0.149369        0.089493        0.045710        0.511624        1.000000        0.105713        0.112623
PGDROP             -0.025686        0.232494       -0.237554        0.069615        0.105713        1.000000        0.131990
PPTRAT              0.184306        0.153303       -0.134927        0.085229        0.112623        0.131990        1.000000
PENRL               0.171621        0.580742        0.052215        0.154774        0.155819        0.146744        0.353028
PAGBLD             -0.056953       -0.083440        0.074200       -0.216878       -0.130058        0.025654        0.066550
PPUPRM              0.102924        0.275459       -0.029857        0.134933        0.134146        0.127327        0.736677
PSEX                0.087487       -0.075623       -0.133135       -0.022421        0.003476       -0.008183        0.039651
PSREP               0.076205        0.222109        0.229639        0.108599        0.045080       -0.020098       -0.009516
PBDROP              0.022916        0.255917       -0.255225        0.118395        0.140617        0.849208        0.196810
TEXP                0.005562        0.163844       -0.046120        0.120869        0.092836        0.160545        0.215893
TCOND               0.119399       -0.001688        0.533544       -0.018175        0.016616       -0.261995        0.001769
TLOC               -0.085005       -0.085275        0.212009       -0.052609       -0.091221       -0.121392       -0.269959
TSESB               0.127133        0.092537        0.124139        0.017891       -0.026562        0.034177        0.074365
TTRNG               0.084654        0.383256        0.056212        0.182843        0.025526        0.058329        0.082624
TCOLAT              0.070275       -0.063850        0.165057        0.003790        0.037328       -0.060265       -0.063446
TRELAC             -0.020437       -0.077503       -0.021423        0.027580        0.016886        0.031508        0.119205
TPRHAB              0.024466       -0.012110        0.345345       -0.038645       -0.130851       -0.180699       -0.066993
TSEX               -0.037599        0.001902       -0.070062        0.019256        0.045937        0.054553        0.167166
TRACE               0.092239       -0.118573        0.287541       -0.128246       -0.148318       -0.191625       -0.120514
TSAL                0.096510        0.359857        0.167864        0.139032        0.011384        0.034178       -0.111895
TVOCAB              0.066991        0.026889        0.294326       -0.119530       -0.178489       -0.122687       -0.101722
SEXPTN             -0.081905        0.050781       -0.011505       -0.054147       -0.022375        0.058398        0.107117
SSES                0.099099        0.196183        0.553023       -0.058644       -0.108998       -0.198651       -0.172509
SATTUD              0.013838       -0.092393        0.317698       -0.065666       -0.109698       -0.254942       -0.192014
SFSS                0.083462       -0.107921        0.273173       -0.086676       -0.056162       -0.213059       -0.090045
SEDPLN             -0.031408        0.165747        0.542795        0.075317        0.011367       -0.110698       -0.071736
SHBTS              -0.030692       -0.034028        0.203933        0.000733       -0.058060       -0.125146       -0.059543
SACHV               0.098753        0.021221        0.500219       -0.112449       -0.123764       -0.234737       -0.183482
SSEX               -0.034128       -0.058298        0.117317       -0.047491       -0.048690       -0.098956       -0.097184
SRETHC              0.100248       -0.125295        0.265319       -0.186053       -0.179821       -0.242555       -0.106507
PPTA                0.167588       -0.025985       -0.044594       -0.084204       -0.025371       -0.109334        0.099518
PTURN               0.043240       -0.309010        0.104028       -0.174793       -0.122374       -0.088177       -0.177051
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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                          12TH GRADE - SET 1, 59

CORRELATION MATRIX       SELECTED VARIABLE

                        PTOVOC          PRURUB          PTOCOL          PNTCOL          PNTVOC          PGDROP          PPTRAT

PTENR                -0.026449        0.261944       -0.118888       -0.033030       -0.018285        0.073090        0.042870
PTEXM                -0.047186        0.243305       -0.046134       -0.000311        0.055192        0.210066        0.164097
PNWENT                0.032493        0.333849        0.116407        0.243115        0.131941        0.121171       -0.167117
PHMWK                -0.049156        0.177459        0.205352        0.050345       -0.108660       -0.069787       -0.006039
TWHUND                0.081385       -0.118150        0.272135       -0.137237       -0.144753       -0.151540       -0.138671
TWHITE                0.075851       -0.179543        0.283682       -0.218700       -0.198550       -0.264098       -0.124602
SSOCON                0.000842       -0.077967        0.199846       -0.025981       -0.083635       -0.218551       -0.160355
SPTA                  0.000693       -0.059347        0.188611        0.096774        0.078499       -0.131060       -0.042552
SKGTN                 0.011265        0.265978        0.179227       -0.047535       -0.081326       -0.056601       -0.096695
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FACTOR ANALYSIS - MERGED DATA
12TH GRADE

12TH GRADE - SET 1, 59

CORRELATION MATRIX   SELECTED VARIABLE

	PENRL	PAGBLD	PPUPRM	PSEX	PSREP	PBDROP	TEXP
PPLNT	0.145508	-0.052621	-0.009432	-0.120926	0.135406	-0.068378	0.020197
PEXP	-0.009337	-0.003482	-0.185147	-0.008807	-0.001197	-0.118810	0.212183
PTRNG	0.522293	-0.200835	0.022698	-0.216192	0.109841	0.196084	0.189384
PCOLAT	-0.073934	0.116138	-0.024598	-0.072486	-0.009269	-0.018695	-0.086340
PINSTF	0.497361	-0.201199	0.105567	-0.086365	0.408863	0.022338	0.104407
PSPST	0.740326	-0.137368	0.244158	-0.045296	0.312491	0.170563	0.150130
PTRCK	0.401309	-0.159152	0.260287	0.001621	0.149931	0.219442	0.106832
PTSTG	-0.224872	0.249393	0.132592	0.092822	-0.127231	-0.073840	0.075809
PTRNS	0.223542	-0.104376	0.050995	0.151946	0.050412	0.045674	-0.090131
PREMD	0.228857	-0.043342	-0.011020	-0.048704	0.148227	0.159105	0.039523
PFLUN	-0.193796	0.184637	0.017317	0.045850	-0.162029	-0.050983	-0.017136
PACRD	0.170572	0.032556	0.124431	0.103346	0.264137	0.013428	0.114981
PAGTXT	-0.207471	0.194646	-0.129812	0.033245	-0.289180	-0.062448	0.001508
PAVTXT	-0.075431	-0.100232	-0.158941	0.002959	-0.001210	-0.208333	0.024013
PTOVOC	0.171621	-0.056953	0.102924	0.087487	0.076205	0.022916	0.005562
PRURUB	0.680742	-0.083440	0.275459	-0.075623	0.222109	0.255917	0.163844
PTOCOL	0.052215	0.074200	-0.029857	-0.133135	0.229639	-0.255226	-0.046120
PNTCOL	0.154774	-0.216878	0.134933	-0.022421	0.108599	0.118395	0.120869
PNTVOC	0.155819	-0.130058	0.134146	0.003476	0.045080	0.140617	0.092836
PGDROP	0.146744	0.025654	0.127327	-0.008183	-0.020098	0.849208	0.160545
PPTRAT	0.353028	0.066550	0.736677	0.039651	-0.009518	0.196810	0.215893
PENRL	1.000000	-0.158942	0.504431	-0.047342	0.287788	0.206143	0.200697
PAGBLD	-0.158942	1.000000	0.039560	0.075005	-0.157391	-0.033265	0.168996
PPUPRM	0.504431	0.039560	1.000000	-0.021063	0.084604	0.188224	0.133419
PSEX	-0.047342	0.075005	-0.021063	1.000000	0.001460	-0.031298	0.076276
PSREP	0.287788	-0.157391	0.084604	0.001460	1.000000	-0.022284	-0.005703
PBDROP	0.206143	-0.033265	0.188224	-0.031298	-0.022284	1.000000	0.162540
TEXP	0.200697	0.168996	0.133419	0.076276	-0.005703	0.162540	1.000000
TCOND	-0.032523	0.120650	0.047071	0.038505	0.335949	-0.249637	0.021074
TLOC	-0.179363	0.116236	-0.124792	-0.000044	-0.007634	-0.172446	-0.299759
TSESB	0.207449	0.022841	0.000840	-0.072426	-0.024681	0.019827	-0.040962
TTRNG	0.447389	0.002252	0.090776	-0.033036	0.235905	0.078720	0.507517
TCOLAT	0.014882	0.066345	-0.007758	0.063549	0.107551	-0.097491	0.043821
TRELAC	-0.055865	0.094299	0.181449	0.006543	0.107275	0.043090	0.253897
TPRHAB	0.115247	-0.052448	-0.003744	-0.021853	0.073715	-0.192340	-0.132384
TSEX	0.071884	-0.087833	0.103012	0.047409	-0.288213	0.047431	0.234452
TRACE	-0.055353	0.210536	-0.119350	0.035107	0.094496	-0.212426	-0.090141
TSAL	0.393969	0.029913	0.012184	-0.047874	0.265290	0.037756	0.234865
TVOCAB	0.059996	0.268985	-0.018743	-0.030019	0.068200	-0.165092	-0.007532
SEXPTN	-0.016767	-0.127624	0.015211	0.029026	-0.054449	0.044767	0.068268
SSES	0.176703	0.080821	-0.025340	-0.034953	0.272773	-0.220607	-0.110453
SATTUD	-0.132967	0.080899	-0.192723	0.034773	0.158773	-0.256921	-0.063483
SFSS	-0.096378	0.041650	-0.041825	0.038475	0.109975	-0.209139	-0.140444
SEDPLN	0.108759	-0.109608	0.016784	-0.081369	0.151608	-0.128435	-0.094470
SHBTS	-0.016462	0.005906	-0.077765	0.044995	0.082432	-0.128330	0.042327
SACHV	-0.013077	0.160455	-0.111205	0.027925	0.212645	-0.261773	-0.109172
SSEX	-0.108726	0.111818	-0.059546	-0.034183	-0.022007	-0.098409	-0.082712
SRETHC	-0.072704	0.211200	-0.133310	0.031038	0.139990	-0.256631	-0.078217
PPTA	-0.004589	0.114138	-0.019554	0.247452	0.017657	-0.085244	0.095137
PTURN	-0.338692	0.098102	-0.182384	-0.053259	-0.249810	-0.150341	-0.309090

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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                         12TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                         PENRL          PAGBLD          PPUPRM            PSEX           PSREP          PBDROP            TEXP

PTENR                 0.249978        0.088813        0.047954       -0.116229       -0.065048        0.080383        0.209335
PTEXM                 0.207141        0.016670        0.165295       -0.014879       -0.079840        0.199606        0.067259
PNWENT                0.340983       -0.060560       -0.069455       -0.024758        0.179719        0.117878        0.076291
PHMWK                 0.170759        0.015349       -0.029428        0.100208       -0.002128       -0.035692        0.126000
TWHUND               -0.081169        0.211055       -0.135417        0.031987        0.090838       -0.181142       -0.075716
TWHITE               -0.139905        0.223265       -0.149783        0.041863        0.106453       -0.291652       -0.131106
SSOCON               -0.091830        0.022699       -0.178438        0.053020        0.157410       -0.211584       -0.041262
SPTA                 -0.086053       -0.078739        0.014728       -0.054413       -0.010586       -0.110065       -0.081300
SKGTN                 0.253585        0.137801        0.111728       -0.024133        0.249847       -0.082432       -0.008663
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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                              12TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                      TCOND         TLOC        TSESB        TTRNG       TCOLAT       TRELAC       TPRHAB

PPLNT              0.266966    -0.047443    -0.060562     0.106391    -0.116330     0.067810    -0.004625
PEXP              -0.051309    -0.062539    -0.053385     0.045031    -0.032479     0.067938    -0.049750
PTRNG             -0.080527    -0.124306     0.278607     0.504080     0.026502    -0.167347     0.104075
PCOLAT             0.180824     0.108949     0.045522    -0.052407     0.162246     0.055587     0.027381
PINSTF             0.110348     0.058439     0.218115     0.371092     0.191934     0.010404     0.185246
PSPST              0.056656    -0.003637     0.300324     0.545081     0.098581    -0.053455     0.109177
PTRCK             -0.071296    -0.208397     0.145861     0.300142     0.044013     0.002792     0.051008
PTSTG              0.110500     0.055326    -0.170067    -0.143375     0.036344     0.303875    -0.079427
PTRNS             -0.049910     0.009392     0.060951     0.109820     0.035563    -0.083672     0.060589
PREMD             -0.032094     0.092405    -0.007527     0.171500     0.036391     0.026894     0.121616
PFLUN              0.112667    -0.021151    -0.069961    -0.108574     0.056354     0.059455    -0.060092
PACRD              0.076181     0.115176    -0.016697     0.241568     0.138904     0.116732     0.086076
PAGTXT            -0.104309     0.008934     0.022521    -0.060983    -0.010272    -0.002644    -0.081300
PAVTXT             0.052719     0.179994     0.049729    -0.083786     0.099415    -0.025353     0.092960
PTOVOC             0.119399    -0.085005     0.127133     0.084654     0.070275    -0.020437     0.024466
PRURUB            -0.001688    -0.085275     0.092537     0.383256    -0.063850    -0.077503    -0.012110
PTOCOL             0.533544     0.212009     0.124139     0.056212     0.165057    -0.021423     0.345345
PNTCOL            -0.018175    -0.052609     0.017891     0.182843     0.003790     0.027580    -0.038645
PNTVOC             0.016616    -0.091221    -0.026562     0.025526     0.037328     0.016886    -0.130851
PGDROP            -0.261995    -0.121392     0.034177     0.058329    -0.060265     0.031508    -0.180699
PPTRAT             0.001769    -0.269959     0.074365     0.082624    -0.063446     0.119205    -0.066993
PENRL             -0.032523    -0.179363     0.207449     0.447389     0.014882    -0.055865     0.115247
PAGBLD             0.120650     0.116236     0.022841     0.002252     0.066345     0.094299    -0.052448
PPUPRM             0.047071    -0.124792     0.000840     0.090776    -0.007758     0.181449    -0.003744
PSEX               0.038505    -0.000044    -0.072426    -0.033036     0.063549     0.006543    -0.021853
PSREP              0.335949    -0.007634    -0.024681     0.235905     0.107551     0.107275     0.073715
PBDROP            -0.249637    -0.172446     0.019827     0.078720    -0.097491     0.043090    -0.192340
TEXP               0.021074    -0.299759    -0.040962     0.507517     0.043821     0.253897    -0.132384
TCOND              1.000000     0.054103    -0.005323     0.070710     0.140253     0.069572     0.162477
TLOC               0.054103     1.000000    -0.006329    -0.162583     0.161546     0.081395     0.167664
TSESB             -0.005323    -0.006329     1.000000     0.205080     0.248915    -0.288479     0.344581
TTRNG              0.070710    -0.162583     0.205080     1.000000     0.133343     0.007402     0.005567
TCOLAT             0.140253     0.161546     0.248915     0.133343     1.000000    -0.045237     0.210569
TRELAC             0.069572     0.081395    -0.288479     0.007402    -0.045237     1.000000    -0.260711
TPRHAB             0.162477     0.167664     0.344581     0.005567     0.210569    -0.260711     1.000000
TSEX              -0.149978    -0.199423     0.176734    -0.081601    -0.046563     0.045270     0.091783
TRACE              0.321920     0.128111     0.325553     0.129297     0.381433    -0.391849     0.307191
TSAL               0.183569     0.090608     0.289167     0.775674     0.269712    -0.093970     0.116099
TVOCAB             0.222786     0.231677     0.441568     0.216739     0.387701    -0.193060     0.412684
SEXPTN            -0.042482    -0.145823    -0.148078    -0.195822    -0.218900     0.124432     0.072593
SSES               0.469939     0.312192     0.282623     0.158628     0.245695    -0.120087     0.437276
SATTUD             0.354076     0.110290     0.027874     0.024281     0.261979    -0.191004     0.265407
SFSS               0.414724     0.122900     0.029457    -0.075165     0.258099    -0.213203     0.219163
SEDPLN             0.378398     0.185448    -0.042703    -0.042534    -0.000222     0.057886     0.308110
SHBTS              0.194163     0.063424    -0.061694    -0.001928     0.055698     0.038252     0.150845
SACHV              0.508203     0.251947     0.244425     0.094244     0.300554    -0.212407     0.362539
SSEX               0.180510     0.066786    -0.052388    -0.030333     0.045684    -0.111006    -0.003031
SRETHC             0.355056     0.125523     0.309317     0.110204     0.338663    -0.363234     0.313691
PPTA               0.102374    -0.074464     0.013151     0.134419     0.018690     0.088848    -0.022826
PTURN              0.005448     0.327547     0.065065    -0.293259     0.231260    -0.118520     0.144867
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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                  12TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                    TCOND          TLOC          TSESB          TTRNG          TCOLAT         TRELAC         TPRHAB

PTENR           -0.155010     -0.090389       0.181261       0.377681       0.030398      -0.109873      -0.052011
PTEXM           -0.065556     -0.177994       0.093406      -0.028462      -0.100617      -0.004997       0.025225
PNWENT          -0.003113     -0.013340       0.149032       0.258584       0.189091      -0.231458       0.075526
PHMWK            0.101991      0.007359       0.076693       0.208201      -0.091898      -0.019863       0.145655
TWHUND           0.318404      0.121354       0.307507       0.111221       0.380415      -0.403341       0.314838
TWHITE           0.356052      0.147884       0.255324       0.017187       0.327126      -0.358759       0.304316
SSOCON           0.236857      0.067152      -0.003777       0.050728       0.180937      -0.190750       0.169843
SPTA             0.233087      0.021378      -0.147329      -0.119561       0.093240      -0.092625       0.077491
SKGTN            0.249032      0.136962       0.071003       0.288011       0.066311       0.062609       0.040680
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FACTOR ANALYSIS - MERGED DATA
12TH GRADE

12TH GRADE - SET 1, 59

CORRELATION MATRIX SELECTED VARIABLE

	TSEX	TRACE	TSAL	TVOCAB	SEXPTN	SSES	SATTUD
PPLNT	-0.050166	0.066514	0.074624	-0.000832	0.029132	0.140263	0.073786
PEXP	0.072037	-0.111689	0.033996	-0.070385	-0.003717	-0.056212	-0.017362
PTRNG	0.012340	0.026984	0.527534	0.161513	-0.114512	0.164937	-0.067443
PCOLAT	-0.142225	0.145176	0.114139	0.184334	-0.147650	0.125960	0.064869
PINSTF	-0.079031	0.169095	0.426410	0.229219	-0.165191	0.440842	0.057819
PSPST	-0.010946	0.030867	0.601692	0.245934	-0.160519	0.338549	-0.052004
PTRCK	0.033931	-0.050796	0.245727	0.022974	-0.036294	0.022720	-0.100932
PTSTG	0.047006	-0.048159	-0.199958	0.003513	-0.009452	-0.036966	-0.056903
PTRNS	-0.040520	0.020247	0.080275	-0.000790	0.078417	0.077156	0.032908
PREMD	-0.165341	-0.014064	0.249174	0.079416	-0.008622	0.059980	-0.000405
PFLUN	0.027334	0.000094	-0.103290	-0.028162	-0.091897	-0.121184	-0.002745
PACRD	-0.112533	0.170410	0.162399	0.145245	-0.055234	0.252489	0.087947
PAGTXT	0.118113	0.028551	-0.117142	-0.025762	-0.147665	-0.058830	-0.043354
PAVTXT	0.072128	0.118677	-0.021086	0.146781	-0.000596	0.194362	0.167212
PTOVOC	-0.037599	0.092239	0.096510	0.066991	-0.081905	0.099099	0.013838
PRURUB	0.001902	-0.118573	0.359857	0.026889	0.050781	0.196183	-0.092393
PTOCOL	-0.070062	0.287541	0.167864	0.294326	-0.011505	0.553023	0.317698
PNTCOL	0.019256	-0.128246	0.139032	-0.119530	-0.054147	-0.058644	-0.065666
PNTVOC	0.045937	-0.148318	0.011384	-0.178489	-0.022375	-0.108998	-0.109698
PGDROP	0.054553	-0.191625	0.034178	-0.122687	0.058398	-0.198651	-0.254942
PPTRAT	0.167166	-0.120514	-0.111895	-0.101722	0.107117	-0.172509	-0.192014
PENRL	0.071884	-0.055353	0.393969	0.059996	-0.016767	0.176703	-0.132967
PAGBLD	-0.087833	0.210536	0.029913	0.268985	-0.127624	0.080821	0.080899
PPUPRM	0.103012	-0.119350	0.012184	-0.018743	0.015211	-0.025340	-0.192723
PSEX	0.047409	0.035107	-0.047874	-0.030019	0.029026	-0.034953	0.034773
PSREP	-0.288213	0.094496	0.265290	0.068200	-0.054449	0.272773	0.158773
PBDROP	0.047431	-0.212426	0.037756	-0.165092	0.044767	-0.220607	-0.256921
TEXP	0.234432	-0.090141	0.234865	-0.007532	0.068268	-0.110453	-0.063483
TCOND	-0.149978	0.321920	0.183569	0.222786	-0.042482	0.469939	0.354076
TLOC	-0.199423	0.128111	0.090608	0.231677	-0.145823	0.312192	0.110290
TSESB	0.176734	0.325553	0.289167	0.441568	-0.148078	0.282623	0.027874
TTRNG	-0.081601	0.129297	0.775674	0.216739	-0.195822	0.158628	0.024281
TCOLAT	-0.046563	0.381433	0.269712	0.387701	-0.218900	0.245695	0.261979
TRELAC	0.045270	-0.391849	-0.093970	-0.193060	0.124432	-0.120087	-0.191004
TPRHAB	0.091783	0.307191	0.116099	0.412684	0.072593	0.437276	0.265407
TSEX	1.000000	-0.223110	-0.259303	-0.049608	0.156290	-0.156201	-0.139406
TRACE	-0.223110	1.000000	0.225989	0.682823	-0.370085	0.564214	0.500078
TSAL	-0.259303	0.225989	1.000000	0.377741	-0.272422	0.352039	0.131318
TVOCAB	-0.049608	0.682823	0.377741	1.000000	-0.311483	0.562144	0.371582
SEXPTN	0.156290	-0.370085	-0.272422	-0.311483	1.000000	-0.153717	0.091476
SSES	-0.156201	0.564214	0.352039	0.562144	-0.153717	1.000000	0.440656
SATTUD	-0.139406	0.500078	0.131318	0.371582	0.091476	0.440656	1.000000
SFSS	-0.154025	0.545073	0.078685	0.381242	-0.034527	0.529684	0.670782
SEDPLN	0.050169	-0.034317	0.057195	0.025495	0.454381	0.489280	0.323374
SHBTS	0.047877	0.137140	-0.026395	0.130878	0.394669	0.336575	0.576452
SACHV	-0.179958	0.725380	0.314896	0.621498	-0.234275	0.814031	0.617025
SSEX	-0.058810	0.210000	0.065862	0.225859	0.075728	0.261280	0.330080
SRETHC	-0.170701	0.895286	0.196297	0.655694	-0.377490	0.591222	0.543148
PPTA	0.176616	-0.075380	0.014304	-0.008484	0.049067	-0.034484	0.039726
PTURN	-0.069461	0.191809	-0.117748	0.124970	-0.080355	0.143223	0.151466

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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                   12TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                     TSEX           TRACE          TSAL          TVOCAB         SEXPTN         SSES           SATTUD

PTENR              0.084904       0.032496       0.329759       0.180976      -0.111004       0.038736      -0.072299
PTEXM              0.114936      -0.131580      -0.044831      -0.081982       0.109269      -0.096652      -0.117834
PNWENT            -0.117967       0.165294       0.340513       0.162027      -0.090855       0.189723       0.157130
PHMWK              0.116369      -0.035171       0.170581       0.065430       0.085334       0.128531       0.099307
TWHUND            -0.192983       0.967388       0.222201       0.681086      -0.340995       0.548787       0.527841
TWHITE            -0.207511       0.904703       0.132481       0.631100      -0.316457       0.567719       0.526815
SSOCON            -0.107593       0.416925       0.111408       0.281462       0.100949       0.311668       0.937850
SPTA              -0.107715       0.119551      -0.048578      -0.006942       0.061898       0.100251       0.326007
SKGTN             -0.133160       0.185516       0.514195       0.358456      -0.210575       0.497989       0.092113
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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                      12TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                    SFSS        SEDPLN         SHBTS         SACHV          SSEX        SRETHC          PPTA

PPLNT           0.108115      0.154010      0.097529      0.111548      0.069070      0.056985      0.089726
PEXP           -0.065350      0.003769      0.003243     -0.049030     -0.018967     -0.098959      0.003513
PTRNG          -0.096470      0.033182     -0.088079      0.062686     -0.029368      0.011971     -0.060051
PCOLAT          0.122827      0.028898     -0.029223      0.142359      0.122508      0.098962     -0.166048
PINSTF          0.068293      0.156712      0.053290      0.300929     -0.025339      0.144445      0.007579
PSPST          -0.049571      0.095589     -0.026988      0.181121     -0.066383      0.035584      0.060588
PTRCK          -0.115575     -0.043211     -0.057780     -0.064635     -0.103568     -0.063655     -0.019556
PTSTG           0.012060     -0.039512      0.040238     -0.016879      0.065864     -0.013475      0.139593
PTRNS          -0.016078      0.140263      0.022807      0.080364     -0.002816      0.020108      0.181518
PREMD          -0.042750      0.068185      0.007918      0.004615     -0.059596     -0.040745     -0.104269
PFLUN          -0.037780     -0.037882     -0.018124     -0.004334      0.031299     -0.014958      0.170971
PACRD           0.061383      0.112381      0.109590      0.168521      0.010038      0.131957      0.015274
PAGTXT         -0.019474     -0.120727     -0.071363     -0.010167     -0.034607      0.044308      0.154521
PAVTXT          0.146637      0.091134      0.085183      0.194049      0.033469      0.109828     -0.000665
PTOVOC          0.083462     -0.031408     -0.030692      0.098753     -0.034128      0.100248      0.167588
PRURUB         -0.107921      0.165747     -0.034028      0.021221     -0.058298     -0.125295     -0.025985
PTOCOL          0.273173      0.542795      0.203933      0.500219      0.117317      0.265319     -0.044594
PNTCOL         -0.086676      0.075317      0.000733     -0.112449     -0.047491     -0.186053     -0.084204
PNTVOC         -0.056162      0.011367     -0.058060     -0.123764     -0.048690     -0.179821     -0.025371
PGDROP         -0.213059     -0.110698     -0.125146     -0.234737     -0.098956     -0.242555     -0.109334
PPTRAT         -0.090045     -0.071736     -0.059543     -0.183482     -0.097184     -0.106507      0.099518
PENRL          -0.096378      0.108759     -0.016462     -0.013077     -0.108726     -0.072704     -0.004589
PAGBLD          0.041650     -0.109608      0.005906      0.160455      0.111818      0.211200      0.114138
PPUPRM         -0.041825      0.016784     -0.077765     -0.111205     -0.059546     -0.133310     -0.019554
PSEX            0.038475     -0.081369      0.044995      0.027925     -0.034183      0.031038      0.247452
PSREP           0.109975      0.151608      0.082432      0.212645     -0.022007      0.139990      0.017657
PBDROP         -0.209139     -0.128435     -0.128330     -0.261773     -0.098409     -0.256631     -0.085244
TEXP           -0.140444     -0.094470      0.042327     -0.109172     -0.082712     -0.078217      0.095137
TCOND           0.414724      0.378398      0.194163      0.508203      0.180510      0.355056      0.102374
TLOC            0.122900      0.185448      0.063424      0.251947      0.066786      0.125523     -0.074464
TSESB           0.029457     -0.042703     -0.061694      0.244425     -0.052388      0.309317      0.013151
TTRNG          -0.075165     -0.042534     -0.001928      0.094244     -0.030333      0.110204      0.134419
TCOLAT          0.258099     -0.000222      0.055698      0.300554      0.045684      0.338663      0.018690
TRELAC         -0.213203      0.057886      0.038252     -0.212407     -0.111006     -0.363234      0.088848
TPRHAB          0.219163      0.308110      0.150845      0.362539     -0.003051      0.313691     -0.022826
TSEX           -0.154025      0.050169      0.047877     -0.179958     -0.058810     -0.170701      0.176616
TRACE           0.545073     -0.034317      0.137140      0.726380      0.210000      0.895286     -0.075380
TSAL            0.078685      0.057195     -0.026395      0.314896      0.065862      0.196297      0.014004
TVOCAB          0.381242      0.025495      0.130878      0.621498      0.225859      0.655694     -0.008484
SEXPTN         -0.034527      0.454381      0.394669     -0.234275      0.075728     -0.377490      0.049067
SSES            0.529684      0.489280      0.336575      0.814031      0.261280      0.591222     -0.034484
SATTUD          0.670782      0.323374      0.576432      0.617026      0.330080      0.543148      0.039726
SFSS            1.000000      0.281383      0.559514      0.629088      0.539596      0.588687     -0.084920
SEDPLN          0.281383      1.000000      0.431567      0.338108      0.149572     -0.053281     -0.022409
SHBTS           0.559514      0.431567      1.000000      0.221146      0.526710      0.111325      0.069054
SACHV           0.629088      0.338108      0.221146      1.000000      0.221489      0.796256     -0.017581
SSEX            0.539596      0.149572      0.526710      0.221489      1.000000      0.215049     -0.028853
SRETHC          0.588687     -0.053281      0.111325      0.796256      0.215049      1.000000     -0.010977
PPTA           -0.084920     -0.022409      0.069054     -0.017581     -0.028853     -0.010977      1.000000
PTURN           0.160364      0.064485     -0.000534      0.226194      0.055154      0.175327      0.045224
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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                     12TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                    SFSS          SEDPLN          SHBTS          SACHV          SSEX          SRETHC          PPTA

PTENR           -0.072159      -0.122018      -0.053572      -0.025432      -0.020352      0.058057      0.038194
PTEXM           -0.129645      -0.021941      -0.020148      -0.159892      -0.059799     -0.146065      0.058929
PNWENT           0.106624       0.117070       0.092337       0.168551      -0.035475      0.093990     -0.012674
PHMWK           -0.063965.      0.199450       0.137933       0.072331      -0.028094     -0.007787      0.122627
TWHUND           0.562209      -0.030729       0.144651       0.732303       0.228313      0.894743     -0.068178
TWHITE           0.579300      -0.020650       0.127678       0.755850       0.230629      0.913335     -0.075811
SSOCON           0.604082       0.223228       0.627244       0.448886       0.352248      0.444563      0.032968
SPTA             0.436359       0.129720       0.333792       0.185789       0.281120      0.125055     -0.131911
SKGTN            0.157896       0.131870       0.104707       0.395018       0.231127      0.205154     -0.041639
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FACTOR ANALYSIS - MERGED DAIA
12TH GRADE                                                         12TH GRADE - SET 1, 59

CORRELATION MATRIX       SELECTED VARIABLE

                     PTURN          PTENR          PTEXM         PNWENT          PHMWK         TWHUND         TWHITE

PPLNT            -0.159066      -0.214133       0.025387      -0.022918       0.143899       0.079556       0.043977
PEXP             -0.142407       0.076168      -0.028626      -0.110970      -0.120748      -0.119261      -0.068553
PTRNG            -0.099102       0.278633       0.101612       0.336901       0.185820       0.012219      -0.062366
PCOLAT            0.102788      -0.234287      -0.023637       0.003260      -0.036439       0.148235       0.126746
PINSTF           -0.045940       0.067650       0.036863       0.282306       0.114899       0.143025       0.097282
PSPST            -0.217094       0.320778       0.137280       0.412790       0.223113       0.014102      -0.061320
PTRCK            -0.271176       0.161523       0.108710       0.159497       0.185203      -0.079695      -0.098852
PTSTG             0.029994      -0.040049      -0.102045      -0.306354      -0.212982      -0.034078       0.017579
PTRNS            -0.005311      -0.053823       0.093491       0.148799       0.059385       0.031305       0.005004
PREMD            -0.064372       0.079528       0.033435       0.125128       0.138945      -0.001785      -0.033927
PFLUN             0.174768      -0.006822      -0.026575      -0.067954      -0.004487      -0.010567      -0.051345
PACRD            -0.081161      -0.036992      -0.085914       0.128101       0.079744       0.140258       0.117833
PAGTXT            0.242941       0.046780      -0.157466      -0.039280      -0.047903       0.011161       0.054050
PAVTXT            0.113158       0.059310      -0.007807       0.003102      -0.027432       0.135105       0.134705
PTOVOC            0.043240      -0.026449      -0.047186       0.032493      -0.049156       0.081385       0.075851
PRURUB           -0.309010       0.261944       0.243305       0.333849       0.177459      -0.118150      -0.179543
PTOCOL            0.104028      -0.118888      -0.046134       0.116407       0.205352       0.272135       0.283682
PNTCOL           -0.174793      -0.033030      -0.000311       0.243115       0.050345      -0.137237      -0.218700
PNTVOC           -0.122374      -0.018285       0.055192       0.131941      -0.108660      -0.144753      -0.198550
PGDROP           -0.088177       0.073090       0.210066       0.121171      -0.069787      -0.151540      -0.264098
PPTRAT           -0.177051       0.042870       0.164097      -0.167117      -0.006039      -0.138671      -0.124602
PENRL            -0.338692       0.249978       0.207141       0.340983       0.170759      -0.081169      -0.139905
PAGBLD            0.098102       0.088813       0.016670      -0.060560       0.015349       0.211055       0.223265
PPUPRM           -0.182384       0.047954       0.165295      -0.069455      -0.029428      -0.135417      -0.149783
PSEX             -0.053259      -0.116229      -0.014879      -0.024758       0.100208       0.031987       0.041863
PSREP            -0.249810      -0.065048      -0.079840       0.179719      -0.002128       0.090838       0.106453
PBDROP           -0.150341       0.080383       0.199606       0.117878      -0.035692      -0.181142      -0.291652
TEXP             -0.309090       0.209335       0.067269       0.076291       0.126000      -0.075716      -0.131106
TCOND             0.005448      -0.155010      -0.065556      -0.003113       0.101991       0.318404       0.356052
TLOC              0.327547      -0.090389      -0.177994      -0.013340       0.007359       0.121354       0.147884
TSESB             0.065065       0.181261       0.093406       0.149032       0.076693       0.307507       0.255324
TTRNG            -0.293259       0.377681      -0.028462       0.258584       0.208201       0.111221       0.017187
TCOLAT            0.231260       0.030398      -0.100617       0.189091      -0.091898       0.380415       0.327126
TRELAC           -0.118520      -0.109873      -0.004997      -0.231458      -0.019863      -0.403341      -0.358759
TPRHAB            0.144867      -0.052011       0.025225       0.075528       0.145655       0.314838       0.304316
TSEX             -0.069461       0.084904       0.114936      -0.117967       0.116369      -0.192983      -0.207511
TRACE             0.191809       0.032496      -0.131580       0.165294      -0.035171       0.967388       0.904703
TSAL             -0.117748       0.329759      -0.044831       0.340513       0.170581       0.222201       0.132481
TVOCAB            0.124970       0.180976      -0.081982       0.162027       0.065430       0.681086       0.631100
SEXPTN           -0.080355      -0.111004       0.109269      -0.090855       0.085334      -0.340995      -0.316457
SSES              0.143223       0.038736      -0.096652       0.189723       0.128531       0.548787       0.567719
SATTUD            0.151466      -0.072299      -0.117834       0.157130       0.099307       0.527841       0.526815
SFSS              0.160364      -0.072159      -0.129645       0.106624      -0.063965       0.562209       0.579300
SEDPLN            0.064485      -0.122018      -0.021941       0.117070       0.199450      -0.030729      -0.020650
SHBTS            -0.000534      -0.053572      -0.020148       0.092337       0.137933       0.144651       0.127678
SACHV             0.226194      -0.025432      -0.159892       0.168551       0.072331       0.732303       0.755850
SSEX              0.055154      -0.020352      -0.059799      -0.035475      -0.028094       0.228313       0.230629
SRETHC            0.175327       0.058057      -0.146065       0.093990      -0.007787       0.894743       0.913335
PPTA              0.045224       0.038194       0.058929      -0.012674       0.122627      -0.068178      -0.075811
PTURN             1.000000      -0.139547      -0.111670      -0.016195      -0.109212       0.196036       0.197519
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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                       12TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                    PTURN          PTENR          PTEXM         PNWENT          PHMWK         TWHUND         TWHITE

PTENR           -0.139547       1.000000      -0.016820       0.132779       0.032034       0.015107       0.014466
PTEXM           -0.111670      -0.016820       1.000000       0.077861       0.038536      -0.119845      -0.159481
PNWENT          -0.016195       0.132779       0.077861       1.000000       0.110545       0.144905       0.008596
PHMWK           -0.109212       0.032034       0.038536       0.110545       1.000000      -0.046399      -0.053455
TWHUND           0.196036       0.015107      -0.119845       0.144905      -0.046399       1.000000       0.909165
TWHITE           0.197519       0.014466      -0.159481       0.008596      -0.053455       0.909165       1.000000
SSOCON           0.063193      -0.032664      -0.101835       0.155718       0.099879       0.433608       0.428148
SPTA             0.136519      -0.128443      -0.059234       0.064237      -0.100829       0.132219       0.113457
SKGTN           -0.125576       0.229133      -0.073707       0.157613       0.038256       0.176806       0.175291
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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                                12TH GRADE - SET 1, 59

CORRELATION MATRIX       SELECTED VARIABLE

                         SSOCON          SPTA           SKGTN

PPLNT                 0.060439       0.049444        0.012000
PEXP                 -0.011365       0.000578       -0.012160
PTRNG                -0.046714      -0.080162        0.235187
PCOLAT                0.023668       0.069524        0.163465
PINSTF                0.047561      -0.043495        0.318047
PSPST                -0.047873      -0.092542        0.467449
PTRCK                -0.054850      -0.084159        0.082567
PTSTG                -0.074129      -0.020853        0.078936
PTRNS                 0.031963      -0.032859       -0.054726
PREMD                -0.005926       0.012987        0.117724
PFLUN                -0.052515       0.130198       -0.034853
PACRD                 0.099027      -0.018970        0.069822
PAGTXT               -0.078215       0.005275       -0.039472
PAVTXT                0.141295       0.051764        0.059333
PTOVOC                0.000842       0.000693        0.011265
PRURUB               -0.077967      -0.059347        0.265978
PTOCOL                0.199846       0.188611        0.179227
PNTCOL               -0.025981       0.096774       -0.047535
PNTVOC               -0.083635       0.078499       -0.081326
PGDROP               -0.218551      -0.131060       -0.056601
PPTRAT               -0.160353      -0.042552       -0.096695
PENRL                -0.091830      -0.086053        0.253585
PAGBLD                0.022699      -0.078739        0.137801
PPUPRM               -0.178438       0.014728        0.111728
PSEX                  0.053020      -0.054413       -0.024133
PSREP                 0.157410      -0.010586        0.249847
PBDROP               -0.211584      -0.110065       -0.082432
TEXP                 -0.041262      -0.081300       -0.008663
TCOND                 0.236857       0.233087        0.249032
TLOC                  0.067152       0.021378        0.136962
TSESB                -0.003777      -0.147329        0.071003
TTRNG                 0.050728      -0.119561        0.288011
TCOLAT                0.180937       0.093240        0.066311
TRELAC               -0.190750      -0.092625        0.062609
TPRHAB                0.169843       0.077491        0.040680
TSEX                 -0.107593      -0.107715       -0.133160
TRACE                 0.416925       0.119551        0.185516
TSAL                  0.111408      -0.048578        0.514195
TVOCAB                0.281462      -0.006942        0.358456
SEXPTN                0.100949       0.061898       -0.210575
SSES                  0.311668       0.100251        0.497989
SATTUD                0.937850       0.326007        0.092113
SFSS                  0.604082       0.436359        0.157896
SEDPLN                0.223228       0.129720        0.131870
SHBTS                 0.627244       0.333792        0.104707
SACHV                 0.448886       0.185789        0.395018
SSEX                  0.352248       0.281120        0.231127
SRETHC                0.444563       0.125055        0.205154
PPTA                  0.032968      -0.131911       -0.041639
PTURN                 0.063193       0.136519       -0.125576
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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                               12TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                        SSOCON          SPTA            SKGTN

PTENR                 -0.032664       -0.128443        0.229133
PTEXM                 -0.101835       -0.059234       -0.073707
PNWENT                 0.155718        0.064237        0.157613
PHMWK                  0.099879       -0.100829        0.038256
TWHUND                 0.433608        0.132219        0.176806
TWHITE                 0.428148        0.113457        0.175291
SSOCON                 1.000000        0.324105        0.061119
SPTA                   0.324105        1.000000       -0.059706
SKGTN                  0.061119       -0.059706        1.000000
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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                       12TH GRADE - SET 2, 48+11

SELECTED VARIABLE


THE NUMBER OF OBSERVATIONS IS      26332.

VARIABLE          SUMS        SUMS OF SQUARES           MEAN            SIGMA(N)        SIGMA(N-1)
SSEX          -357.8524          2778.5063           -0.0136             0.3246            0.3246
SRETHC        -337.3701         18593.9460           -0.0128             0.8402            0.8402
PCOMPL       -1918.3476         26042.0256           -0.0729             0.9918            0.9918
PSES         -3708.4903         29882.4634           -0.1408             1.0559            1.0560
PASGN        -4132.5647         23373.4053           -0.1569             0.9290            0.9290
PDATTN       -3945.7050         25427.4038           -0.1498             0.9712            0.9712
PWHITE        5968.1547         20782.2478            0.2267             0.8590            0.8590
PPROB        -6566.9470         22773.2676           -0.2494             0.8959            0.8959
PPRSLR       -1101.8991         25224.5437           -0.0418             0.9779            0.9779
PCRED         -181.3741         26645.3813           -0.0069             1.0059            1.0059
TCRED        -4505.9965          5751.9072           -0.1711             0.4349            0.4349
TASGN         6392.8748          6590.4101            0.2428             0.4374            0.4374
TINST        -2511.5892          2413.7751           -0.0954             0.2873            0.2874
```

FACTOR ANALYSIS - MERGED DATA
12TH GRADE

12TH GRADE - SET 2, 48+11

CORRELATION MATRIX   SELECTED VARIABLE

	SFSS	SEDPLN	SHBTS	SACHV	SSEX	SRETHC	PCOMPL
PPLNT	0.157908	0.193241	0.125609	0.134250	0.102355	0.067931	-0.111865
PEXP	-0.072555	0.000186	0.003830	-0.057285	-0.024424	-0.107151	-0.043065
PTRNG	-0.133332	0.046528	-0.110275	0.077169	-0.046458	0.005619	0.080999
PCOLAT	0.154416	0.029791	-0.036580	0.159733	0.174382	0.114067	0.051071
PINSTF	0.104325	0.167751	0.069077	0.344016	-0.031035	0.176950	0.085675
PSPST	-0.077728	0.145255	-0.019238	0.212358	-0.123213	0.019876	0.188524
PTRCK	-0.159549	-0.039323	-0.072264	-0.069514	-0.153189	-0.082563	0.043724
PTSTG	0.024109	-0.050651	0.050895	-0.027378	0.096224	-0.013430	0.099710
PTRNS	-0.031430	0.165852	0.029115	0.096670	-0.008215	0.016730	-0.100976
PREMD	-0.088913	0.072307	0.004120	-0.002075	-0.091993	-0.054436	0.034847
PFLUN	-0.042521	-0.044225	-0.022706	-0.005787	0.045339	-0.014685	0.080299
PACRD	0.085698	0.121021	0.138828	0.191761	0.020152	0.159652	0.094436
PAGTXT	-0.013284	-0.147554	-0.095105	-0.017938	-0.046565	0.057715	0.145140
PAVTXT	0.182097	0.100787	0.106126	0.219943	0.047971	0.126055	0.068634
PTOVOC	0.099587	-0.033667	-0.038519	0.114300	-0.050184	0.112513	-0.014010
PRURUB	-0.163435	0.205280	-0.042879	0.031327	-0.093439	-0.162089	-0.018493
PTOCOL	0.340782	0.602397	0.254396	0.564021	0.168027	0.303116	0.143961
PNTCOL	-0.100624	0.081181	0.000758	-0.128380	-0.065357	-0.206368	-0.022897
PNTVOC	-0.063485	0.009883	-0.072579	-0.141123	-0.067086	-0.199416	-0.040260
PGDROP	-0.270835	-0.120598	-0.161620	-0.267368	-0.146392	-0.281171	-0.134763
PPTRAT	-0.132226	-0.069874	-0.074742	-0.205245	-0.145939	-0.134030	-0.093709
PENRL	-0.136404	0.126905	-0.019181	-0.012938	-0.163705	-0.090684	0.025433
PAGBLD	0.057426	-0.125977	0.007176	0.179814	0.160099	0.241851	0.313275
PPUPRM	-0.068901	0.028426	-0.097459	-0.122626	-0.090547	-0.161958	0.016244
PSEX	0.047613	-0.093761	0.057790	0.031869	-0.048180	0.035164	0.040460
PSREP	0.125921	0.174211	0.103272	0.242869	-0.033929	0.152746	0.091591
PBDROP	-0.267640	-0.139386	-0.164153	-0.297770	-0.142779	-0.298795	-0.129055
TEXP	-0.151325	-0.092494	0.046901	-0.104143	-0.084091	-0.082540	0.111256
TCOND	0.425808	0.392910	0.198381	0.530482	0.182343	0.369051	0.129492
TLOC	0.129198	0.189692	0.063046	0.257988	0.067680	0.130976	0.151887
TSESB	0.019773	-0.034641	-0.057018	0.274759	-0.053713	0.324094	0.126182
TTRNG	-0.095740	-0.030254	0.007678	0.126549	-0.031546	0.115389	0.268010
TCOLAT	0.258845	0.008481	0.062841	0.330412	0.046711	0.354073	0.214921
TRELAC	-0.216375	0.056796	0.036906	-0.226572	-0.112564	-0.377654	0.002589
TPRHAB	0.217754	0.332461	0.161646	0.398277	-0.003115	0.328504	0.083463
TSEX	-0.160432	0.053574	0.049787	-0.184290	-0.059576	-0.177805	-0.153337
TRACE	0.567835	-0.040264	0.136893	0.749024	0.213239	0.934121	0.276873
TSAL	0.067585	0.074977	-0.018274	0.360262	0.068393	0.206985	0.361136
TVOCAB	0.389880	0.029280	0.135152	0.651639	0.228971	0.682014	0.412159
SEXPTN	-0.034527	0.454381	0.394669	-0.234275	0.075728	-0.377490	-0.367273
SSES	0.529684	0.489280	0.336575	0.814031	0.261280	0.591222	0.213431
SATTUD	0.670782	0.323374	0.576432	0.617026	0.330080	0.543148	0.127654
SFSS	1.000000	0.281383	0.559514	0.629088	0.539596	0.588687	0.075009
SEDPLN	0.281383	1.000000	0.431567	0.338108	0.149572	-0.053281	-0.122989
SHBTS	0.559514	0.431567	1.000000	0.221146	0.526710	0.111325	-0.034590
SACHV	0.629088	0.338108	0.221146	1.000000	0.221489	0.796256	0.274211
SSEX	0.539596	0.149572	0.526710	0.221489	1.000000	0.215049	0.128094
SRETHC	0.588687	-0.053281	0.111325	0.796256	0.215049	1.000000	0.281662
PCOMPL	0.075009	-0.122989	-0.034590	0.274211	0.128094	0.281662	1.000000
PSES	-0.030039	0.135700	0.123449	0.281334	-0.045821	0.203397	0.119984

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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                   12TH GRADE - SET 2, 48+11

CORRELATION MATRIX      SELECTED VARIABLE

                    SFSS         SEDPLN        SHBTS         SACHV          SSEX        SRETHC        PCOMPL

PASGN           0.072382      0.030640      0.004316      0.116872      0.048927      0.104858      0.254901
PDATTN          0.202216      0.035354      0.207711      0.270711      0.081701      0.352764      0.288195
PWHITE          0.606174     -0.063558      0.106375      0.749242      0.228957      0.910853      0.279974
PPROB          -0.310917     -0.012087     -0.101938     -0.199470     -0.117010     -0.250540     -0.090857
PPRSLR          0.148068     -0.035246      0.039355      0.032189     -0.009754      0.031115      0.166316
PCRED          -0.043708      0.007233     -0.084384      0.114976      0.079484      0.062435     -0.001124
TCRED          -0.076443      0.184923     -0.034843      0.137015     -0.009311     -0.004717      0.155465
TASGN           0.356976      0.086831      0.121712      0.345460      0.131789      0.377134      0.013091
TINST          -0.232865      0.115753      0.000266     -0.177779     -0.051995     -0.245806     -0.036626
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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                  12TH GRADE - SET 2, 48+11

CORRELATION MATRIX      SELECTED VARIABLE

                     PSES        PASGN       PDATTN       PWHITE        PPROB       PPRSLR        PCRED

PPLNT            0.215769     0.052231     0.062716     0.091935     0.043342    -0.037372    -0.074969
PEXP             0.003457    -0.072632     0.126008    -0.103763     0.050365    -0.033283     0.097887
PTRNG            0.316050    -0.135755    -0.026271    -0.034563     0.316265    -0.268265     0.258406
PCOLAT           0.040592    -0.046621    -0.093365     0.145195    -0.085793    -0.004576     0.194653
PINSTF           0.392782     0.033636     0.048191     0.186097     0.222036    -0.109300     0.187125
PSPST            0.477786     0.037632    -0.047397    -0.021849     0.328357    -0.104517     0.182924
PTRCK            0.185826     0.032520    -0.100066    -0.042375     0.147486    -0.057885     0.134880
PTSTG            0.013337     0.061452     0.027881    -0.029545    -0.215579     0.265276    -0.019836
PTRNS            0.063449    -0.084236    -0.192738    -0.006258     0.168856    -0.089497     0.144676
PREMD            0.120636     0.060173    -0.028519    -0.052045     0.163846     0.062073     0.026184
PFLUN           -0.043850    -0.039677    -0.064490    -0.039135    -0.113714    -0.026184     0.001908
PACRD            0.251699     0.212296     0.107386     0.128070     0.042757    -0.120335    -0.037563
PAGTXT          -0.149219    -0.079477    -0.071462     0.060128    -0.127409    -0.046153     0.051223
PAVTXT          -0.087174     0.071800     0.096259     0.102320    -0.035262     0.134455    -0.021578
PTOVOC           0.012802    -0.108605    -0.027207     0.120919    -0.067273     0.042583     0.091594
PRURUB           0.359509     0.092384    -0.131966    -0.192848     0.367469    -0.160934     0.148616
PTOCOL           0.236594     0.142713     0.161647     0.293901    -0.103787    -0.084804     0.067097
PNTCOL           0.025479     0.061519    -0.034784    -0.243537     0.155936     0.010578     0.000555
PNTVOC          -0.023729    -0.003545    -0.029850    -0.238592     0.113582     0.076291    -0.003372
PGDROP           0.056362    -0.040503    -0.262091    -0.257597     0.213705    -0.060710     0.025273
PPTRAT           0.006477     0.025405    -0.103344    -0.140453     0.084729    -0.061563     0.012137
PENRL            0.379590     0.062543    -0.090106    -0.127487     0.316397    -0.164212     0.165541
PAGBLD           0.038392     0.147673     0.093330     0.223272    -0.188247     0.028435     0.008787
PPUPRM           0.140433     0.192432    -0.214764    -0.156843     0.094438     0.045163     0.046707
PSEX            -0.075969    -0.094864    -0.147742     0.038013    -0.143709     0.063146    -0.090053
PSREP            0.351029     0.067188     0.154179     0.140567     0.067674     0.071839    -0.118187
PBDROP           0.030792    -0.052108    -0.277035    -0.297921     0.283920    -0.040129     0.039301
TEXP             0.208751    -0.018849     0.160467    -0.121776     0.077232    -0.060816    -0.026357
TCOND            0.204841     0.074389     0.236827     0.376251    -0.273531     0.141960    -0.047199
TLOC             0.016627     0.252648    -0.070157     0.100407    -0.169991     0.124988     0.039557
TSESB            0.167804    -0.101877     0.120331     0.288053     0.037398    -0.195459     0.190856
TTRNG            0.419084     0.067602     0.170226     0.072471     0.249413    -0.148075     0.155231
TCOLAT          -0.017355     0.045314     0.104762     0.425923    -0.128954     0.076156     0.076842
TRELAC           0.130699     0.079559    -0.051559    -0.289798    -0.032831     0.213176    -0.062413
TPRHAB           0.139639     0.170935     0.104790     0.329524    -0.078063    -0.183520     0.110085
TSEX            -0.050889    -0.078577     0.012898    -0.283971     0.045560    -0.117732    -0.005502
TRACE            0.143452     0.147370     0.280541     0.871437    -0.220050     0.007821     0.070421
TSAL             0.348243     0.061864     0.132522     0.189777     0.154345    -0.075933     0.220960
TVOCAB           0.201688     0.222012     0.226469     0.611897    -0.131150     0.010263     0.148946
SEXPTN          -0.160122    -0.165293    -0.064902    -0.363885     0.097444    -0.030685    -0.154893
SSES             0.447082     0.151407     0.167805     0.560122    -0.096875    -0.016171     0.173231
SATTUD           0.013344     0.073623     0.342012     0.535265    -0.233651     0.089617    -0.099435
SFSS            -0.030039     0.072382     0.202216     0.606174    -0.310917     0.148068    -0.043706
SEDPLN           0.135700     0.030640     0.035354    -0.063558    -0.012087    -0.035246     0.007235
SHBTS            0.123449     0.004316     0.207711     0.106375    -0.101938     0.039355    -0.084384
SACHV            0.281334     0.116872     0.270711     0.749242    -0.199470     0.022189     0.114976
SSEX            -0.045821     0.048927     0.081701     0.228957    -0.117010    -0.009754     0.079454
SRETHC           0.203397     0.104858     0.352764     0.910853    -0.250540     0.031115     0.062435
PCOMPL           0.119984     0.254901     0.288195     0.279974    -0.090857     0.166316    -0.001124
PSES             1.000000     0.066322     0.077930     0.162905     0.137608    -0.118277     0.127546
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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                         12TH GRADE - SET 2, 48+11

CORRELATION MATRIX      SELECTED VARIABLE

                      PSES          PASGN         PDATTN         PWHITE          PPROB         PPRSLR          PCRED

PASGN             0.066322       1.000000       0.063235       0.098675      -0.004070       0.118878      -0.075869
PDATTN            0.077930       0.063235       1.000000       0.349135      -0.116100       0.149486      -0.167851
PWHITE            0.162905       0.098675       0.349135       1.000000      -0.292372       0.057979       0.065543
PPROB             0.137608      -0.004070      -0.116100      -0.292372       1.000000      -0.109628       0.105836
PPRSLR           -0.118277       0.118878       0.149486       0.057979      -0.109628       1.000000      -0.269789
PCRED             0.127546      -0.075869      -0.167851       0.065543       0.105836      -0.269789       1.000000
TCRED             0.049594      -0.010832      -0.102795       0.021928      -0.012056      -0.203585       0.373051
TASGN            -0.082013      -0.041711       0.110716       0.372650      -0.280112       0.064251      -0.054800
TINST             0.208700      -0.082572       0.100434      -0.219252       0.191679      -0.132888       0.038736
```

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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                       12TH GRADE - SET 2, 48+11

CORRELATION MATRIX      SELECTED VARIABLE

                      TCRED          TASGN          TINST

PPLNT              -0.075548       0.046708      -0.017908
PEXP                0.181484       0.006487       0.129740
PTRNG               0.303162      -0.255135       0.206689
PCOLAT              0.137772       0.144076      -0.217455
PINSTF              0.224706      -0.047461       0.097187
PSPST               0.300231      -0.265532       0.181999
PTRCK               0.056517      -0.238739       0.164959
PTSTG              -0.126927       0.124710      -0.100136
PTRNS               0.073503      -0.031873       0.098911
PREMD               0.144652      -0.145139       0.070646
PFLUN              -0.061718      -0.007372      -0.079673
PACRD               0.103825       0.037144       0.089705
PAGTXT              0.178459      -0.018942      -0.104495
PAVTXT              0.082974       0.205963      -0.069336
PTOVOC              0.080515       0.039306      -0.012814
PRURUB              0.127448      -0.356016       0.226337
PTOCOL              0.162057       0.188464      -0.051099
PNTCOL              0.029717      -0.226564       0.102669
PNTVOC             -0.065861      -0.112630       0.091203
PGDROP             -0.003911      -0.213349       0.017181
PPTRAT             -0.036264      -0.218731       0.176630
PENRL               0.145253      -0.315008       0.190756
PAGBLD              0.083638       0.118609      -0.208231
PPUPRM             -0.002367      -0.214520       0.070276
PSEX               -0.036352       0.031959      -0.094436
PSREP              -0.074296       0.074808       0.108895
PBDROP             -0.079362      -0.255717       0.030993
TEXP                0.171741      -0.190562       0.168654
TCOND               0.011913       0.250240      -0.027224
TLOC                0.230575       0.215972      -0.207622
TSESB               0.243674      -0.031661       0.021884
TTRNG               0.322926      -0.171926       0.298856
TCOLAT              0.226253       0.163280      -0.195218
TRELAC              0.093639      -0.109041       0.085013
TPRHAB              0.112059       0.153508      -0.026037
TSEX               -0.066669      -0.183696       0.079567
TRACE               0.078436       0.387501      -0.271977
TSAL                0.469121      -0.089714       0.123774
TVOCAB              0.266759       0.224111      -0.140430
SEXPTN             -0.126878      -0.045284       0.145494
SSES                0.249539       0.235204      -0.077325
SATTUD             -0.004990       0.277186      -0.144136
SFSS               -0.076443       0.356976      -0.232865
SEDPLN              0.184923       0.086831       0.115753
SHBTS              -0.034840       0.121712       0.000266
SACHV               0.137015       0.345460      -0.177779
SSEX               -0.009311       0.131789      -0.051996
SRETHC             -0.004717       0.377134      -0.245806
PCOMPL              0.155465       0.013091      -0.036626
PSES                0.049594      -0.082013       0.208700
```

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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                  12TH GRADE - SET 2, 48+11

CORRELATION MATRIX      SELECTED VARIABLE

                     TCRED          TASGN          TINST

PASGN             -0.010832      -0.041711      -0.082572
PDATTN            -0.102795       0.110716       0.100434
PWHITE             0.021928       0.372650      -0.219252
PPROB             -0.012056      -0.280112       0.191679
PPRSLR            -0.203585       0.064251      -0.132888
PCRED              0.373051      -0.054800       0.038736
TCRED              1.000000      -0.000222       0.145759
TASGN             -0.000222       1.000000      -0.241883
TINST              0.145759      -0.241883       1.000000
```

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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                    12TH GRADE - SET 3, 48+6

SELECTED VARIABLE


THE NUMBER OF OBSERVATIONS IS      26332.

VARIABLE         SUMS         SUMS OF SQUARES          MEAN           SIGMA(N)         SIGMA(N-1)
SSEX          -357.8524          2778.5063           -0.0136           0.3246           0.3246
SRETHC        -337.3701         18593.9460           -0.0128           0.8402           0.8402
THONOR       -2549.1676          3406.4051           -0.0968           0.3464           0.3464
THRTCH      -30510.3782         38720.5488           -1.1587           0.3577           0.3577
TSIZE        -3918.9385          6819.4158           -0.1488           0.4867           0.4867
SAGE         -1144.2531          3310.1187           -0.0435           0.3519           0.3519
SFORPT        1521.4570          3516.5407            0.0578           0.3608           0.3609
SFORST       -1781.3486          1755.0939           -0.0677           0.2492           0.2492
```

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FACTOR ANALYSIS - MERGED DATA
12TH GRADE                                                    12TH GRADE - SET 3, 48+6

CORRELATION MATRIX     SELECTED VARIABLE

                        SFSS          SEDPLN          SHBTS          SACHV          SSEX          SRETHC          THONOR

TSIZE                0.031609      -0.190385       0.047595       0.050268      -0.085423       0.197672       0.321919
SAGE                 0.543770       0.273842       0.303520       0.467566       0.117436       0.396795       0.096393
SFORPT               0.277798       0.144296       0.438495       0.089004       0.396535       0.087086      -0.029345
SFORST               0.415569       0.311538       0.517368       0.327094       0.476861       0.158418      -0.020143
```

FACTOR ANALYSIS - MERGED DATA
12TH GRADE

12TH GRADE - SET 3, 43+6

CORRELATION MATRIX SELECTED VARIABLE

	THRTCH	TSIZE	SAGE	SFORPT	SFORST
PPLNT	-0.002581	-0.031836	-0.067724	0.029032	0.165437
PEXP	-0.056152	-0.022379	-0.023138	-0.020939	-0.042685
PTRNG	0.141541	0.204687	-0.111719	-0.186611	-0.004439
PCOLAT	0.008370	-0.119600	-0.062604	0.050240	0.067093
PINSTF	0.039988	0.144408	0.097051	-0.111968	0.144547
PSPST	0.226799	0.222726	-0.002860	-0.165219	0.109717
PTRCK	0.121997	0.245518	0.029940	-0.192568	-0.102403
PTSTG	-0.037024	-0.124301	-0.036550	0.110197	0.064628
PTRNS	0.042691	0.004969	0.074474	0.040670	0.003167
PREMD	0.093136	0.139041	0.090791	-0.180909	0.035372
PFLUN	-0.057552	-0.110097	-0.136940	0.030892	-0.039745
PACRD	0.011602	0.094329	0.128109	-0.059857	0.104462
PAGTXT	-0.144426	-0.049143	-0.080390	0.087487	-0.044407
PAVTXT	-0.068116	0.021439	0.127022	0.064598	0.072497
PTOVOC	0.026447	0.121783	0.081170	-0.060818	0.013111
PRURUB	0.166174	0.128725	0.011855	-0.201138	0.030487
PTOCOL	-0.003891	-0.113457	0.147250	0.042710	0.198376
PNTCOL	0.000594	0.026670	-0.102713	-0.175341	-0.051641
PNTVOC	-0.013475	-0.082945	-0.096898	-0.158219	-0.059055
PGDROP	0.030063	0.074428	-0.141137	-0.067729	-0.109833
PPTRAT	0.110409	0.173279	-0.022714	-0.001878	-0.068818
PENRL	0.182176	0.214609	0.020766	-0.204578	0.002173
PAGBLD	-0.075669	0.091982	0.049367	0.014897	0.141966
PPUPRM	0.122140	0.051361	-0.003889	-0.086973	-0.025609
PSEX	-0.025200	0.063887	0.092922	0.073161	-0.044052
PSREP	0.141134	0.134297	0.151485	-0.095243	0.127108
PBDROP	0.051814	0.122292	-0.181107	-0.082734	-0.101309
TEXP	0.096643	0.142322	-0.143657	-0.030400	-0.076428
TCOND	0.044522	-0.042795	0.201927	0.096795	0.219478
TLOC	-0.065450	-0.089667	0.147500	0.070749	0.217975
TSESB	0.193256	0.270751	0.045216	0.019209	-0.010315
TIRNG	0.315816	0.283723	-0.040829	-0.201415	-0.002972
TCOLAT	0.133288	0.004269	0.186519	0.039792	-0.065523
TRELAC	-0.034414	-0.076888	-0.170330	0.015050	0.016126
TPRHAB	0.162520	0.025086	0.290429	0.070405	0.088783
TSEX	-0.038395	-0.079579	-0.188339	0.165199	-0.146588
TRACE	-0.012059	0.210270	0.348531	0.021590	0.138327
TSAL	0.288909	0.221211	0.094813	-0.235018	0.112259
TVOCAB	0.113441	0.227230	0.249145	0.062654	0.230663
SEXPTN	-0.028951	-0.144505	0.100327	0.278320	0.190952
SSES	-0.116719	0.093490	0.421982	0.143225	0.436150
SATTUD	0.049198	0.032819	0.483529	0.264463	0.349651
SFSS	0.058773	0.031609	0.543770	0.277798	0.415569
SEDPLN	-0.129576	-0.190385	0.273842	0.144296	0.311538
SHBTS	-0.050315	0.047595	0.303520	0.438495	0.517368
SACHV	-0.079604	0.050268	0.467566	0.089004	0.327094
SSEX	0.013828	-0.065423	0.117436	0.396535	0.476861
SRETHC	0.057904	0.197672	0.396795	0.087086	0.158418
THONOR	0.107729	0.321919	0.096393	-0.029543	-0.020143
THRTCH	1.000000	0.147449	0.068801	0.007898	-0.119728

FACTOR ANALYSIS - MERGED DATA
12TH GRADE

12TH GRADE - SET 3, 48+6

CORRELATION MATRIX SELECTED VARIABLE

	SFSS	SEDPLN	SHBTS	SACHV	SSEX	SRETHC	THONOR
PPLNT	0.108115	0.154010	0.097529	0.111548	0.069070	0.056985	0.060148
PEXP	-0.065350	0.003769	0.003243	-0.049030	-0.018967	-0.098959	-0.167048
PTRNG	-0.096470	0.033182	-0.088079	0.062686	-0.029368	0.011971	0.109003
PCOLAT	0.122827	0.028898	-0.029223	0.142359	0.122508	0.098962	-0.003482
PINSTF	0.068293	0.156712	0.053290	0.300929	-0.025339	0.144445	0.178607
PSPST	-0.049571	0.095589	-0.026988	0.181121	-0.066383	0.035584	0.214784
PTRCK	-0.115575	-0.043211	-0.057780	-0.064635	-0.103568	-0.063655	0.159675
PTSTG	0.012060	-0.039512	0.040238	-0.016879	0.065864	-0.013475	-0.112792
PTRNS	-0.016073	0.140263	0.022807	0.080364	-0.002816	0.020108	0.067925
PREMD	-0.042750	0.068185	0.007918	0.004615	-0.059596	-0.040745	0.095796
PFLUN	-0.037780	-0.037882	-0.018124	-0.004334	0.031299	-0.014958	-0.136809
PACRD	0.061383	0.112381	0.109590	0.168521	0.010038	0.131957	0.269659
PAGTXT	-0.019474	-0.120727	-0.071363	-0.010167	-0.034607	0.044308	-0.158469
PAVTXT	0.146637	0.091134	0.085183	0.194049	0.033469	0.109828	0.048213
PTOVOC	0.083462	-0.031408	-0.030692	0.093753	-0.034128	0.100248	0.030389
PRURUB	-0.107921	0.165747	-0.034028	0.021221	-0.058298	-0.125295	0.168051
PTOCOL	0.273173	0.542795	0.203933	0.500219	0.117317	0.265319	0.019584
PNTCOL	-0.086676	0.075317	0.000733	-0.112449	-0.047491	-0.186053	0.039627
PNTVOC	-0.056162	0.011367	-0.058060	-0.123764	-0.048690	-0.179821	-0.039937
PGDROP	-0.213059	-0.110698	-0.125146	-0.234737	-0.098956	-0.242555	0.028933
PPTRAT	-0.090045	-0.071736	-0.059543	-0.183482	-0.097184	-0.106507	0.000419
PENRL	-0.096378	0.108759	-0.016462	-0.013077	-0.108726	-0.072704	0.208776
PAGBLD	0.041650	-0.109608	0.005906	0.160455	0.111818	0.211200	-0.010838
PPUPRM	-0.041825	0.016784	-0.077765	-0.111205	-0.059546	-0.133310	0.102544
PSEX	0.038475	-0.081369	0.044995	0.027925	-0.034183	0.031038	0.035250
PSREP	0.109975	0.151608	0.082432	0.212645	-0.022007	0.139990	0.221240
PBDROP	-0.209139	-0.128435	-0.128330	-0.261773	-0.098409	-0.256631	0.010706
TEXP	-0.140444	-0.094470	0.042327	-0.109172	-0.082712	-0.078217	0.130951
TCOND	0.414724	0.378398	0.194163	0.508203	0.180510	0.355056	0.135305
TLOC	0.122900	0.185448	0.063424	0.251947	0.066786	0.125523	0.040805
TSESB	0.029457	-0.042703	-0.061694	0.244425	-0.052388	0.309317	0.104811
TTRNG	-0.075165	-0.042534	-0.001929	0.094244	-0.030333	0.110204	0.255858
TCOLAT	0.258099	-0.000222	0.055698	0.300554	0.045684	0.338663	0.070520
TRELAC	-0.213203	0.057886	0.038252	-0.212407	-0.111006	-0.363234	0.099152
TPRHAB	0.219163	0.308110	0.150845	0.362539	-0.003051	0.313691	0.178949
TSEX	-0.154025	0.050169	0.047877	-0.179958	-0.058810	-0.170701	-0.052985
TRACE	0.545073	-0.034317	0.137140	0.725380	0.210000	0.895286	0.133718
TSAL	0.078685	0.057195	-0.026395	0.314896	0.065862	0.196297	0.246884
TVOCAB	0.381242	0.025495	0.130878	0.621498	0.225859	0.655694	0.233016
SEXPTN	-0.034527	0.454381	0.394669	-0.234275	0.075728	-0.377490	-0.011346
SSES	0.529684	0.489280	0.336575	0.814031	0.261280	0.591222	0.206321
SATTUD	0.670782	0.323374	0.576432	0.617026	0.330080	0.543148	0.059488
SFSS	1.000000	0.281383	0.559514	0.629088	0.539596	0.588687	0.007213
SEDPLN	0.281383	1.000000	0.431567	0.338108	0.149572	-0.053281	0.113002
SHBTS	0.559514	0.431567	1.000000	0.221146	0.526710	0.111325	0.076788
SACHV	0.629088	0.338108	0.221146	1.000000	0.221489	0.796256	0.107296
SSEX	0.539596	0.149572	0.526710	0.221489	1.000000	0.215049	-0.022229
SRETHC	0.588687	-0.053281	0.111325	0.796256	0.215049	1.000000	0.124286
THONOR	0.007213	0.113002	0.076788	0.107296	-0.022229	0.1[illegible]4286	1.000000
THRTCH	0.058773	-0.129576	-0.050015	-0.079604	0.013828	0.057904	0.107729

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FACTOR ANALYSIS - MERGED DATA                                   12TH GRADE - SET 3, 48+6
12TH GRADE

CORRELATION MATRIX      SELECTED VARIABLE
                          THRTCH          TSIZE            SAGE          SFORPT          SFORST

TSIZE                   0.147449       1.000000        0.083844       -0.089499        0.011111
SAGE                    0.068801       0.083844        1.000000        0.194412        0.318559
SFORPT                  0.007898      -0.089499        0.194412        1.000000        0.344481
SFORST                 -0.119728       0.011111        0.318559        0.344481        1.000000
```

Ninth Grade School, Teacher Aggregate and Student Aggregate Intercorrelations

The first 43 variables in the following list comprise the basic list.

NO.	ACRONYM	TITLE
1	PPLNT	Plant and Physical Facilities
2	PEXP	Principal's Experience
3	PTRNG	Principal's Training
4	PCOLAT	Principal's College Attended
5	PINSTF	Instructional Facilities
6	PSPST	Specialized Staff and Services
7	PTRCK	Tracking and Ability Grouping
8	PTSTG	Testing
9	PTRNS	Transfers
10	PREMD	Remedial Programs
11	PFLUN	Free Milk and Lunch Programs
12	PACRD	Accreditation
13	PAGTXT	Age of Texts
14	PAVTXT	Availability of Texts
15	PRURUB	Rural-Urban Location of School
16	PPTRAT	Pupil Teacher Ratio
17	PENRL	Number of Students Enrolled
18	PAGBLD	Age of Building
19	PPUPRM	Pupils Per Room
20	PSEX	Principal's Sex

NO.	ACRONYM	TITLE
21	PSREP	Principal's Estimate School Reputation
22	PEXP	Teacher's Experience
23	TCOND	Teaching Conditions
24	TLOC	Teacher's Localism of Background
25	TSESB	Teacher's Socio-Economic Background
26	TTRNG	Teacher's Training
27	TCOLAT	Teacher's College Attended
28	TRELAC	Teaching Related Activities
29	TPRHAB	Teacher's Preference for Student Ability Level
30	TSEX	Teacher's Sex
31	TRACE	Teacher's Racial-Ethnic Group Membership
32	TSAL	Teacher's Annual Teaching Salary
33	TVOCAB	Teacher's Vocabulary Score
34	SEXPTN	Student's Expectations for Excellence
35	SSES	Student's Socio-Economic Status
36	SSOCON	Student's Social Confidence
37	SATTUD	Student's Attitude Toward Life
38	SFSS	Student's Family Structure and Stability
39	SEDPLN	Student's Educational Plans and Desires
40	SHBTS	Student's Study Habits
41	SACHV	Student's Achievement
42	SSEX	Student's Sex
43	SRETHC	Student's Racial-Ethnic Group Membership
44	PSES	Principal's Estimate of Student Body's SES
45	PPTA	Principal's Estimate of PTA Attendance

NO.	ACRONYM	TITLE
46	PTURN	Teacher Turnover
47	PTENR	Teacher Tenure
48	PTEXM	Teacher Examinations
49	PWHITE	Principal's Estimate of Percent White of Student Body
50	PPROB	Principal's Estimate of School Problems
51	PNWENT	Length of Time Since Non-Whites Entered
52	PHMWK	Hours of Homework Expected
53	PHRTCH	Principal's Hours a Day Spent in Classroom Teaching
54	TWHUND	Percent White of Students at Teacher's Undergraduate Institution
55	TWHITE	Percent White of Students in Teacher's Class
56	THRTCH	Teacher's Hours a Day Spent in Classroom Teaching
57	TSIZE	Average Class Size
58	SPTA	Student's Parents PTA Attendance
59	SKGTN	Student's Kindergarten Attendance
SET 2		
44	PFNURS	Free Nursery
45	PCOMPL	Compulsory Attendance Law
46	PLNDAY	Length of School Day
47	PLGRD	Courses from Different Teachers
48	PPTST	Percent of Students in Part-Time Attendance
49	PASGN	Pupil Assignment
50	PDATTN	Percent Daily Attendance

NO.	ACRONYM	TITLE
51	PPRSLR	Promotion Policy
52	PCRED	Principal's Credits Behond Highest Degree
53	TCRED	Teacher's Credits Behond Highest Degree
54	TASGN	Teacher's Assignment to Present School
55	TINST	Teacher Attends Summer Institutes
56	THONOR	Teacher Member National Honorary
57	SAGE	Student's Age
58	SFORPT	Student's Parents Speak a Foreign Language
59	SFORST	Student Speaks a Foreign Language Outside of School

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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                     9TH GRADE - SET 1, 59

SELECTED VARIABLE


THE NUMBER OF OBSERVATIONS IS      20561.

VARIABLE          SUMS        SUMS OF SQUARES          MEAN          SIGMA(N)      SIGMA(N-1)
PPLNT         19568.0891         77393.2207           0.9517          1.6907          1.6907
PEXP           1025.3750         68001.0625           0.0499          1.8179          1.8179
PTRNG          5931.1415         25785.7781           0.2885          1.0821          1.0821
PCOLAT         1603.2373         22324.6396           0.0780          1.0391          1.0391
PINSTF        82599.6250        762280.8984           4.0173          4.5755          4.5756
PSPST         24269.1873        292153.6406           1.1803          3.5799          3.5800
PTRCK          6872.5320         95804.5303           0.3342          2.1326          2.1326
PTSTG          2792.7884         42979.5264           0.1358          1.4394          1.4394
PTRNS         -4007.0743         22924.1563          -0.1949          1.0378          1.0378
PREMD          7409.0637         56940.6255           0.3603          1.6246          1.6247
PFLUN          1660.0712         31081.7830           0.0807          1.2268          1.2269
PACRD          1285.2944         15237.7644           0.0625          0.8586          0.8586
PAGTXT          888.6403          6272.4471           0.0432          0.5506          0.5506
PAVTXT         -391.8777         19799.2454          -0.0191          0.9811          0.9811
PRURUB         -489.0972         12615.6349          -0.0238          0.7829          0.7830
PPTRAT        -6127.5706         13118.8337          -0.2980          0.7411          0.7411
PENRL          6813.2418         23486.9675           0.3314          1.0161          1.0161
PAGBLD         -506.3734         12602.7343          -0.0246          0.7825          0.7825
PPUPRM        -1216.9459          3630.8898          -0.0592          0.4160          0.4160
PSEX          -5712.8794          4885.4722          -0.2778          0.4005          0.4005
PSREP          -284.3358         12169.2428          -0.0138          0.7692          0.7692
TEXP            -69.0358         41127.6440          -0.0034          1.4143          1.4143
TCOND         -8611.6060         69648.7949          -0.4188          1.7922          1.7922
TLOC           -250.3660         36179.8633          -0.0122          1.3265          1.3265
TSESB         -4995.8426         23717.1470          -0.2430          1.0462          1.0462
TTRNG         -5371.9838         20785.2063          -0.2613          0.9709          0.9709
TCOLAT        -2956.7064         14266.9631          -0.1438          0.8205          0.8205
TRELAC          156.3383          8466.8834           0.0076          0.6417          0.6417
TPRHAB        -4119.2626          9831.5303          -0.2003          0.6618          0.6619
TSEX          -6044.4957         11607.7560          -0.2940          0.6915          0.6915
TRACE         -1516.5286         15293.1287          -0.0738          0.8593          0.8593
TSAL          -4689.5533          9852.4641          -0.2281          0.6536          0.6536
TVOCAB        -1924.7961          9677.5150          -0.0936          0.6796          0.6797
SEXPTN        -7518.3622         17893.3589          -0.3657          0.8582          0.8582
SSES         -15377.9462         50817.1924          -0.7479          1.3828          1.3828
SSOCON       -33075.0991        213260.2598          -1.6086          2.7900          2.7901
SATTUD       -25331.6909        127343.3418          -1.2320          2.1623          2.1624
SFSS          -7760.5881         24121.2771          -0.3774          1.0152          1.0153
SEDPLN       -13881.2507         37023.3481          -0.6751          1.1597          1.1597
SHBTS        -11078.1572         38376.7720          -0.5388          1.2555          1.2555
SACHV        -10151.0332        110316.8770          -0.4937          2.2631          2.2631
SSEX          -6616.8059         24107.3037          -0.3218          1.0339          1.0339
SRETHC        -2290.3117         15103.4812          -0.1114          0.8498          0.8498
PSES             42.2252         13277.1875           0.0021          0.8036          0.8036
PPTA          -3193.3932         10430.7621          -0.1553          0.6951          0.6951
PTURN          1169.6907         11225.0317           0.0569          0.7367          0.7367
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                        9TH GRADE - SET 1, 59

SELECTED VARIABLE

THE NUMBER OF OBSERVATIONS IS      20561.

VARIABLE        SUMS        SUMS OF SQUARES        MEAN         SIGMA(N)       SIGMA(N-1)
PTENR        -464.5599        13331.4034         -0.0226         0.8049          0.8049
PTEXM         768.0581        15717.7661          0.0374         0.8735          0.8735
PWHITE      -1829.1323        15358.2074         -0.0890         0.8597          0.8597
PPROB        5409.1874        17505.3196          0.2631         0.8844          0.8844
PNWENT       -376.4352        12747.2388         -0.0183         0.7872          0.7872
PHMWK        9710.3000        17134.8406          0.4723         0.7812          0.7813
PHRTCH      -4408.4471         6922.4269         -0.2144         0.5392          0.5392
TWHUND      -1524.1676        16152.3065         -0.0741         0.8832          0.8832
TWHITE      -1030.2854        12860.6521         -0.0501         0.7893          0.7893
THRTCH       1077.2016         6249.8688          0.0524         0.5488          0.5488
TSIZE       -2948.8433         7348.7473         -0.1434         0.5804          0.5804
SPTA        -2544.4805         4364.1179         -0.1238         0.4438          0.4438
SKGTN       -7842.9960        13973.8304         -0.3814         0.7308          0.7309
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                     9TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                    PPLNT         PEXP          PTRNG         PCOLAT        PINSTF        PSPST         PTRCK

PPLNT             1.000000     -0.015792      0.202881      0.051836      0.527910      0.342952      0.199605
PEXP             -0.015792      1.000000      0.049801     -0.057846      0.029265      0.051503      0.071368
PTRNG             0.202881      0.049801      1.000000      0.145074      0.276047      0.663415      0.252664
PCOLAT            0.051836     -0.057846      0.145074      1.000000      0.084779      0.076689     -0.011151
PINSTF            0.527910      0.029265      0.276047      0.084779      1.000000      0.369389      0.223844
PSPST             0.342952      0.051503      0.663415      0.076689      0.369389      1.000000      0.386227
PTRCK             0.199605      0.071368      0.252664     -0.011151      0.223844      0.386227      1.000000
PTSTG             0.071313      0.013626     -0.193176      0.056864      0.227308     -0.254610     -0.105592
PTRNS            -0.041180     -0.145365      0.191506      0.098280     -0.115178      0.184355     -0.025237
PREMD             0.070841     -0.016023      0.262062      0.021477      0.103079      0.345699      0.387448
PFLUN             0.055453     -0.080733     -0.076246     -0.017798      0.050280     -0.144464     -0.045923
PACRD             0.026000     -0.017086     -0.025946      0.102969      0.203249      0.013918      0.013797
PAGTXT            0.032351      0.040257      0.009283      0.041092      0.083406      0.028348     -0.038794
PAVTXT            0.040591      0.075531      0.029186     -0.075903      0.118362      0.093141     -0.040268
PRURUB            0.025711      0.077291      0.426021      0.020798     -0.035848      0.598173      0.204890
PPTRAT           -0.204561      0.088640     -0.245282     -0.047464     -0.336665     -0.225318     -0.032241
PENRL             0.287566      0.128464      0.513785      0.055571      0.369168      0.701490      0.293845
PAGBLD           -0.015254     -0.037535     -0.088061     -0.128910     -0.014780      0.005538     -0.023255
PPUPRM           -0.062766      0.025673     -0.021828      0.065754     -0.082365      0.075502      0.083271
PSEX             -0.262339      0.082513     -0.185079     -0.032911     -0.388689     -0.105550     -0.076775
PSREP             0.134108      0.084607      0.141746      0.106554      0.120892      0.228396      0.124681
TEXP             -0.090082      0.118190     -0.200124     -0.094908     -0.115878     -0.352142     -0.187320
TCOND             0.047551     -0.093895     -0.003515      0.047904     -0.109964     -0.102559     -0.077213
TLOC              0.037239     -0.143045      0.078532      0.057284      0.006638      0.080974      0.056416
TSESB             0.067670     -0.121839      0.275266      0.123806      0.038740      0.317168      0.113387
TTRNG            -0.009299      0.030564      0.357650      0.047005     -0.020722      0.314128      0.126411
TCOLAT            0.020307     -0.107010      0.191095      0.157238      0.006133      0.197873      0.071537
TRELAC           -0.021173      0.078763     -0.024708     -0.115972      0.068810     -0.104727     -0.048663
TPRHAB            0.072670     -0.078946      0.160897      0.063192     -0.052621      0.125545      0.012946
TSEX             -0.175931      0.087532     -0.298708     -0.121276     -0.268292     -0.424654     -0.188496
TRACE             0.075055     -0.283012      0.094022      0.141465      0.032132      0.115071     -0.029851
TSAL              0.017714     -0.022413      0.502062      0.100992      0.015976      0.502609      0.184534
TVOCAB            0.068228     -0.133079      0.167917      0.058045      0.035518      0.215459      0.052103
SEXPTN            0.101845      0.045849     -0.048576      0.027627      0.036605     -0.026010     -0.070863
SSES              0.224998     -0.083925      0.266447      0.109088      0.144393      0.379751      0.103325
SSOCON            0.043128     -0.015871     -0.016282      0.021637      0.033941     -0.002563     -0.080502
SATTUD            0.065856     -0.047028      0.019425      0.033074      0.044177      0.043690     -0.081370
SFSS              0.114108     -0.108856      0.018992      0.087329      0.049191      0.041860     -0.034098
SEDPLN            0.132393      0.018345      0.159722      0.033846      0.061664      0.216804      0.043539
SHBTS             0.084996      0.021583      0.019149      0.019785      0.063465      0.039486     -0.053474
SACHV             0.130946     -0.177600      0.173789      0.102716      0.079602      0.244243      0.021178
SSEX              0.073531     -0.001627      0.106029      0.012669      0.084005      0.085510      0.026434
SRETHC            0.103772     -0.213952      0.040416      0.114032      0.027546      0.057492     -0.050258
PSES              0.114687     -0.004234      0.235235      0.127584      0.067767      0.328833      0.159733
PPTA              0.029926     -0.014188     -0.044891     -0.033909     -0.075128     -0.034458     -0.010853
PTURN            -0.009535     -0.173736     -0.054427      0.038997      0.000693     -0.079781     -0.159964
PTENR             0.070168      0.031455      0.363584     -0.041130     -0.037695      0.368516      0.132344
PTEXM             0.015040      0.084640      0.080474     -0.006292      0.086179      0.123844      0.085987
PWHITE            0.121877     -0.251655     -0.009026      0.101685      0.017413      0.044579     -0.056014
PPROB             0.070099      0.067979      0.170637      0.038382      0.181067      0.219073      0.126633
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                          9TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                    PPLNT          PEXP          PTRNG         PCOLAT         PINSTF          PSPST          PTRCK

PNWENT          -0.003466     -0.024830       0.337618     -0.015205       0.038318       0.392130       0.177704
PHMWK            0.245322      0.076908       0.136435     -0.032720       0.440890       0.175132       0.162938
PHRTCH          -0.229715     -0.128078      -0.501983      0.025438      -0.304151      -0.488585      -0.234363
TWHUND           0.084227     -0.273305       0.098366      0.127260       0.031793       0.117179      -0.022429
TWHITE           0.107212     -0.223563       0.020449      0.102120       0.034277       0.031867      -0.077117
THRTCH           0.151175      0.009550       0.201102      0.075786       0.146899       0.279193       0.135928
TSIZE           -0.033151     -0.078118       0.061025      0.000943      -0.086649       0.065018       0.003268
SPTA             0.052579      0.040701      -0.072474      0.034440       0.018213      -0.042941      -0.053893
SKGTN            0.116269     -0.055289       0.354749      0.068299       0.096794       0.463335       0.142611
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE

9TH GRADE - SET 1, 59

CORRELATION MATRIX SELECTED VARIABLE

	PTSTG	PTRNS	PREMD	PFLUN	PACRD	PAGTXT	PAVTXT
PPLNT	0.071313	-0.041180	0.070841	0.055453	0.026000	0.032351	0.040591
PEXP	0.013626	-0.145365	-0.016023	-0.080733	-0.017086	0.040257	0.075531
PTRNG	-0.193176	0.191506	0.262062	-0.076246	-0.025946	0.009283	0.029136
PCOLAT	0.056864	0.098280	0.021477	-0.017798	0.102969	0.041092	-0.075903
PINSTF	0.227308	-0.115178	0.103079	0.050280	0.203249	0.083406	0.118362
PSPST	-0.254610	0.184355	0.345699	-0.144464	0.013918	0.028348	0.093141
PTRCK	-0.105592	-0.025237	0.387448	-0.045923	0.013797	-0.038794	-0.040258
PTSTG	1.000000	-0.068485	-0.086372	0.167271	0.138273	0.028612	-0.057726
PTRNS	-0.068485	1.000000	0.140015	0.169227	-0.021031	-0.074852	-0.015136
PREMD	-0.086372	0.140015	1.000000	0.058404	-0.070759	0.049077	-0.074579
PFLUN	0.167271	0.169227	0.058404	1.000000	-0.037767	-0.052331	-0.079139
PACRD	0.138273	-0.021031	-0.070759	-0.037767	1.000000	0.045127	0.112266
PAGTXT	0.028612	-0.074852	0.049077	-0.052331	0.045127	1.000000	-0.000886
PAVTXT	-0.057726	-0.015136	-0.074579	-0.079139	0.112265	-0.000886	1.000000
PRURUB	-0.309155	0.198860	0.265090	-0.159491	0.046888	0.006194	0.032863
PPTRAT	0.008739	-0.003233	-0.026545	-0.075808	-0.116151	-0.141768	-0.151113
PENRL	-0.176662	0.120464	0.242454	-0.087586	0.026469	-0.029620	-0.010471
PAGBLD	-0.008149	-0.067958	-0.029622	0.001575	0.037664	0.103125	0.033238
PPUPRM	-0.009734	0.044301	0.052508	-0.102096	-0.014998	-0.134213	-0.097837
PSEX	0.003746	0.060993	-0.098620	-0.048491	0.019800	0.036535	0.033067
PSREP	-0.046207	-0.026922	0.047288	-0.194608	0.127227	-0.026552	0.073198
TEXP	0.144924	-0.152793	-0.194423	0.008354	-0.067784	0.008588	-0.055099
TCOND	-0.025992	-0.072143	-0.064283	-0.205420	0.024477	0.016818	0.095235
TLOC	-0.082337	0.184689	0.017538	0.079483	0.027250	0.052219	0.069566
TSESB	-0.113148	0.136588	0.150121	-0.099920	0.019198	-0.016383	0.135970
TTRNG	-0.138152	0.072810	0.102219	-0.104873	-0.048365	0.015952	-0.004075
TCOLAT	-0.088108	0.161250	0.082149	-0.030529	0.037616	0.012780	0.042967
TRELAC	0.116376	-0.051261	-0.088452	0.030578	-0.024065	-0.054381	-0.047344
TPRHAB	-0.133609	0.061860	0.093384	-0.113825	0.026104	-0.030223	0.159429
TSEX	0.139490	-0.048946	-0.217179	0.081855	-0.071217	-0.050508	0.058184
TRACE	-0.119719	0.123664	-0.012326	-0.022750	0.086156	0.075318	0.148282
TSAL	-0.168321	0.171127	0.136180	-0.059869	-0.032530	0.013288	0.002010
TVOCAB	-0.082698	0.122573	-0.014018	-0.030805	0.051117	0.058555	0.179547
SEXPTN	-0.038407	-0.038296	-0.071353	-0.121775	0.024576	-0.004548	0.092581
SSES	-0.173650	0.039104	0.052960	-0.246447	0.092085	0.038436	0.143856
SSOCON	-0.040414	-0.015890	-0.063536	-0.046795	0.010775	0.002782	0.130935
SATTUD	-0.068316	-0.003961	-0.073913	-0.106665	0.035736	0.044909	0.165312
SFSS	-0.059057	-0.030458	-0.068067	-0.132153	0.075673	0.013905	0.109417
SEDPLN	-0.101275	0.032278	0.016517	-0.132381	0.040002	0.006715	0.109345
SHBTS	-0.028244	-0.032098	-0.058136	-0.081231	0.042934	0.024022	0.127148
SACHV	-0.125116	0.068725	-0.032651	-0.130093	0.124991	0.082730	0.168174
SSEX	0.003541	0.007469	0.049509	-0.014984	0.017174	0.062536	0.003621
SRETHC	-0.108334	0.032025	-0.070325	-0.149914	0.085782	0.062440	0.140440
PSES	-0.191299	0.062133	0.087652	-0.293229	0.138032	0.028065	0.016737
PPTA	0.032492	-0.034480	-0.007337	-0.048811	-0.069415	0.030111	0.031373
PTURN	0.051039	0.168679	-0.055943	0.052688	-0.027923	0.110322	0.058061
PTENR	-0.177808	0.079659	0.127619	0.029840	-0.057169	-0.017468	0.081032
PTEXM	-0.061460	0.047928	0.040570	0.019429	0.022660	-0.005149	-0.020440
PWHITE	-0.146707	0.004729	-0.093124	-0.220993	0.118741	0.060004	0.129525
PPROB	-0.004003	0.110570	0.207584	0.040224	0.037187	-0.018926	-0.025834

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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                 9TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                      PTSTG         PTRNS         PREMD         PFLUN         PACRD        PAGTXT        PAVTXT

PNWENT            -0.161913      0.218430      0.124555      0.045870     -0.001374      0.038804      0.033055
PHMWK              0.086107     -0.114744      0.114464     -0.021858      0.141156      0.045566      0.041998
PHRTCH             0.177360     -0.008154     -0.127607      0.110176      0.004959     -0.023934     -0.065740
TWHUND            -0.121503      0.134011      0.006304     -0.007852      0.092656      0.071426      0.138002
TWHITE            -0.097652      0.025688     -0.036261     -0.187296      0.115999      0.062528      0.146626
THRTCH            -0.131770     -0.035587      0.090077     -0.172010      0.133188      0.027559      0.057864
TSIZE             -0.075404      0.110745      0.049985      0.006004      0.010555     -0.045384      0.084432
SPTA              -0.016304     -0.046483     -0.071080     -0.030681      0.011536     -0.007357      0.097590
SKGTN             -0.117130      0.062292      0.154524     -0.077521     -0.007953      0.011481      0.095220
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE

9TH GRADE - SET 1, 59

CORRELATION MATRIX   SELECTED VARIABLE

	PRURUB	PPTRAT	PENRL	PAGBLD	PPUPRM	PSEX	PSREP
PPLNT	0.025711	-0.204561	0.287566	-0.015254	-0.062766	-0.262339	0.134108
PEXP	0.077291	0.088640	0.128464	-0.037535	0.025673	0.082513	0.084607
PTRNG	0.426021	-0.245282	0.513785	-0.088061	-0.021828	-0.185079	0.141746
PCOLAT	0.020798	-0.047464	0.055571	-0.128910	0.065754	-0.032911	0.106554
PINSTF	-0.035848	-0.336665	0.369168	-0.014780	-0.082365	-0.388689	0.120892
PSPST	0.598173	-0.225318	0.701490	0.005538	0.075502	-0.105550	0.228396
PTRCK	0.204890	-0.032241	0.293845	-0.023255	0.083271	-0.076775	0.124681
PTSTG	-0.309155	0.008739	-0.176662	-0.008149	-0.009734	0.003746	-0.046207
PTRNS	0.198860	-0.003233	0.120464	-0.067958	0.044301	0.060993	-0.026922
PREMD	0.265090	-0.026545	0.242454	-0.029622	0.052508	-0.098620	0.047288
PFLUN	-0.159491	-0.075808	-0.087586	0.001575	-0.102096	-0.048491	-0.194608
PACRD	0.046888	-0.116151	0.026469	0.037664	-0.014998	0.019800	0.127227
PAGTXT	0.006194	-0.141768	-0.029620	0.103125	-0.134213	0.036535	-0.025552
PAVTXT	0.032863	-0.151113	-0.010471	0.033238	-0.097837	0.033067	0.073198
PRURUB	1.000000	-0.004802	0.523271	0.042364	0.122825	0.025396	0.165719
PPTRAT	-0.004802	1.000000	0.094429	-0.136660	0.593430	0.174113	-0.016226
PENRL	0.523271	0.094429	1.000000	-0.081010	0.365184	-0.112148	0.159109
PAGBLD	0.042364	-0.136660	-0.081010	1.000000	-0.066016	0.093686	-0.117256
PPUPRM	0.122825	0.593430	0.365184	-0.066016	1.000000	0.083462	-0.006462
PSEX	0.025396	0.174113	-0.112148	0.093686	0.083462	1.000000	0.028239
PSREP	0.165719	-0.016226	0.159109	-0.117256	-0.006462	0.028239	1.000000
TEXP	-0.283596	0.060481	-0.240191	0.165143	-0.071388	0.031285	-0.114332
TCOND	-0.057682	0.001116	-0.096559	-0.063858	-0.078008	0.050066	0.333468
TLOC	0.015255	-0.133309	-0.087433	-0.140356	-0.093713	-0.065410	-0.003485
TSESB	0.260407	-0.094744	0.131400	0.067136	-0.008104	-0.048811	0.229958
TTRNG	0.231135	-0.054076	0.139276	-0.023037	-0.006053	0.002121	0.141827
TCOLAT	0.215569	-0.025887	0.126798	-0.012302	0.072312	0.008527	0.142501
TRELAC	-0.125112	0.071875	-0.025336	-0.142747	0.079442	-0.051352	-0.010188
TPRHAB	0.144450	-0.042262	0.049638	-0.011173	-0.022750	0.017008	0.172680
TSEX	-0.294226	0.168801	-0.330785	0.061037	-0.059763	0.186199	-0.094074
TRACE	-0.002567	-0.186437	-0.042630	0.156967	-0.185631	0.012005	0.180104
TSAL	0.327688	-0.182147	0.247291	-0.003248	0.002768	0.023881	0.117166
TVOCAB	0.084486	-0.241724	-0.014470	0.167866	-0.158986	0.026639	0.192930
SEXPTN	-0.017547	-0.035417	-0.056707	-0.007682	-0.088252	-0.009157	0.074274
SSES	0.278740	-0.212461	0.179236	0.044357	-0.109514	-0.082693	0.278856
SSOCON	-0.058185	-0.163327	-0.111580	0.064370	-0.177157	-0.013333	0.080801
SATTUD	-0.019764	-0.210770	-0.087579	0.089723	-0.210728	-0.009960	0.114857
SFSS	-0.039830	-0.180232	-0.056478	0.064930	-0.153427	-0.032640	0.141381
SEDPLN	0.196575	-0.153153	0.106040	-0.039291	-0.118603	-0.044945	0.191027
SHBTS	-0.008899	-0.147429	-0.033832	0.049973	-0.138126	-0.018280	0.099029
SACHV	0.110856	-0.271197	0.035656	0.125324	-0.192365	-0.002044	0.218238
SSEX	0.039367	-0.013813	0.037641	0.061345	0.002404	-0.008415	0.070135
SRETHC	-0.044468	-0.158239	-0.056957	0.117663	-0.161705	-0.005014	0.188471
PSES	0.362220	0.061001	0.254290	0.001234	0.099684	-0.051553	0.290929
PPTA	0.000858	0.055109	-0.070165	-0.051578	-0.038793	0.148801	0.118133
PTURN	-0.162827	-0.118670	-0.108928	-0.003322	-0.104563	-0.060160	-0.146368
PTENR	0.274043	-0.156530	0.206978	0.026232	-0.040146	0.004365	0.061862
PTEXM	0.192484	0.044731	0.251440	0.034911	0.091381	-0.029410	-0.090777
PWHITE	-0.061211	-0.161217	-0.091848	0.171376	-0.167644	-0.018822	0.211043
PPROB	0.225602	-0.072679	0.219648	-0.042857	0.034483	-0.144831	-0.120618

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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                                9TH GRADE - SET 1, 59

CORRELATION MATRIX       SELECTED VARIABLE

                       PRURUB         PPTRAT          PENRL         PAGBLD         PPUPRM           PSEX          PSREP

PNWENT               0.297145      -0.153163       0.283172       0.197576      -0.007866       0.033460       0.025897
PHMWK                0.016355      -0.130456       0.220330      -0.045558      -0.081161      -0.214374       0.119350
PHRTCH              -0.251670       0.007274      -0.423512       0.089077      -0.087380       0.212957      -0.040445
TWHUND               0.013604      -0.182996      -0.028602       0.153823      -0.184121       0.012164       0.155795
TWHITE              -0.068027      -0.144875      -0.071547       0.120977      -0.146793      -0.021764       0.176024
THRTCH               0.197869       0.005816       0.197501      -0.024954       0.100395      -0.042224       0.091411
TSIZE               -0.007117      -0.107789      -0.090138       0.033253      -0.150106       0.100959       0.022907
SPTA                -0.035599      -0.094304      -0.042399       0.008520      -0.096699       0.025096       0.043970
SKGTN                0.326841      -0.207155       0.227712       0.053014      -0.055193      -0.000255       0.165641
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE

9TH GRADE - SET 1, 59

CORRELATION MATRIX   SELECTED VARIABLE

	TEXP	TCOND	TLOC	TSESB	TTRNG	TCOLAT	TRELAC
PPLNT	-0.090082	0.047551	0.037239	0.067670	-0.009299	0.020307	-0.021173
PEXP	0.118190	-0.093895	-0.143045	-0.121839	0.030564	-0.107010	0.078765
PTRNG	-0.200124	-0.003515	0.078532	0.275266	0.357650	0.191095	-0.024708
PCOLAT	-0.094908	0.047904	0.057284	0.123806	0.047005	0.157238	-0.115972
PINSTF	-0.115878	-0.109964	0.006638	0.038740	-0.020722	0.006133	0.068810
PSPST	-0.352142	-0.102559	0.080974	0.317168	0.314128	0.197873	-0.104727
PTRCK	-0.187320	-0.077213	0.056410	0.113387	0.126411	0.071537	-0.048663
PTSTG	0.144924	-0.025992	-0.082337	-0.113148	-0.138152	-0.088108	0.116376
PTRNS	-0.152793	-0.072143	0.184689	0.136588	0.072810	0.161250	-0.051261
PREMD	-0.194423	-0.064283	0.017538	0.150121	0.102219	0.082149	-0.088452
PFLUN	0.008354	-0.205420	0.079483	-0.099920	-0.104873	-0.030529	0.030578
PACRD	-0.067784	0.024477	0.027250	0.019198	-0.048365	0.037616	-0.024065
PAGTXT	0.008588	0.016818	0.052219	-0.016383	0.015952	0.012780	-0.054381
PAVTXT	-0.055099	0.095233	0.069566	0.135970	-0.004073	0.042967	-0.047344
PRURUB	-0.283596	-0.057682	0.015255	0.260407	0.231135	0.215569	-0.125112
PPTRAT	0.060481	0.001116	-0.133309	-0.094744	-0.054076	-0.025887	0.071875
PENRL	-0.240191	-0.096559	-0.087433	0.131400	0.139276	0.126798	-0.025336
PAGBLD	0.165143	-0.063858	-0.140356	0.067136	-0.023037	-0.012302	-0.142747
PPUPRM	-0.071388	-0.078008	-0.093713	-0.008104	-0.006053	0.072312	0.079442
PSEX	0.031285	0.050066	-0.065410	-0.048811	0.002121	0.008527	-0.051352
PSREP	-0.114332	0.333468	-0.003485	0.229958	0.141827	0.142501	-0.010188
TEXP	1.000000	-0.017263	-0.278412	-0.387134	0.179936	-0.246111	0.134359
TCOND	-0.017263	1.000000	0.004217	0.119270	0.011784	0.164584	-0.084782
TLOC	-0.278412	0.004217	1.000000	0.165421	0.072156	0.140362	0.020261
TSESB	-0.387134	0.119270	0.165421	1.000000	0.172422	0.314342	-0.104792
TTRNG	0.179936	0.011784	0.072156	0.172422	1.000000	0.189741	0.069730
TCOLAT	-0.246111	0.164584	0.140362	0.314342	0.189741	1.000000	-0.115041
TRELAC	0.134359	-0.084782	0.020261	-0.104792	0.069730	-0.115041	1.000000
TPRHAB	-0.231115	0.256847	0.047612	0.371004	0.099699	0.266533	-0.251529
TSEX	0.370104	0.099948	-0.143985	-0.105420	-0.221967	-0.116185	0.030824
TRACE	-0.068585	0.334444	0.102621	0.288929	0.079459	0.357669	-0.377902
TSAL	-0.005808	-0.031410	0.194028	0.274562	0.783674	0.286925	-0.018235
TVOCAB	-0.116355	0.196167	0.195928	0.407131	0.171506	0.341563	-0.292131
SEXPTN	0.039982	0.242949	-0.039956	-0.014432	-0.011808	-0.003726	-0.037819
SSES	-0.235569	0.395425	0.106407	0.330075	0.172316	0.265642	-0.210947
SSOCON	0.004385	0.215788	0.037742	0.082417	0.029197	0.101245	-0.072080
SATTUD	-0.037859	0.305177	0.055855	0.137615	0.037931	0.143362	-0.130210
SFSS	-0.063590	0.340043	0.019759	0.117849	0.030773	0.162500	-0.165580
SEDPLN	-0.173896	0.328815	0.112640	0.156872	0.083723	0.145796	-0.081021
SHBTS	-0.006805	0.250758	0.007151	0.078263	0.030077	0.071279	-0.062063
SACHV	-0.193907	0.407806	0.142617	0.284341	0.083978	0.275594	-0.260796
SSEX	-0.057168	0.081846	0.012568	0.087497	0.051276	0.105894	-0.028407
SRETHC	-0.068541	0.408366	0.065719	0.211090	0.027687	0.251944	-0.311382
PSES	-0.166254	0.264109	-0.007954	0.302894	0.152298	0.219128	-0.132046
PPTA	-0.082329	0.247472	-0.041166	0.008887	-0.030319	0.028916	0.051582
PTURN	-0.087241	-0.001891	0.179836	-0.068988	-0.156196	0.087366	-0.008867
PTENR	-0.072011	0.000204	0.040383	0.082806	0.358378	0.095657	-0.101379
PTEXM	-0.046691	-0.111967	-0.134230	0.004076	-0.127731	0.030377	-0.055088
PWHITE	-0.024711	0.434245	0.048367	0.242310	0.059442	0.261518	-0.320158
PPROB	-0.065979	-0.294747	-0.015165	-0.002481	0.040363	-0.004706	0.004393

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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                                    9TH GRADE - SET 1, 59

CORRELATION MATRIX       SELECTED VARIABLE

                          TEXP            TCOND             TLOC            TSESB            TTRNG           TCOLAT           TRELAC

PNWENT               -0.135980        -0.104058         0.134060         0.184030         0.164575         0.264797        -0.088739
PHMWK                -0.078520        -0.011556        -0.044153         0.032169        -0.064360        -0.090373         0.066766
PHRTCH                0.167457         0.129288        -0.042411        -0.144928        -0.171776        -0.035221        -0.096177
TWHUND               -0.042744         0.308840         0.083798         0.284849         0.073979         0.334302        -0.383081
TWHITE               -0.064946         0.443399         0.028082         0.237493        -0.002631         0.274279        -0.317240
THRTCH               -0.257525        -0.027941         0.105863         0.216108         0.177916         0.066479        -0.054766
TSIZE                -0.160344         0.146117         0.123789         0.235513         0.041541         0.178576        -0.114469
SPTA                 -0.021153         0.145505        -0.061239        -0.047902        -0.046539        -0.027209        -0.005046
SKGTN                -0.224978         0.135379         0.082084         0.248434         0.262432         0.244067        -0.099786
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                   9TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                   TPRHAB        TSEX         TRACE          TSAL        TVOCAB        SEXPTN         SSES

PPLNT            0.072670     -0.175931      0.075055      0.017714      0.068228      0.101845      0.224998
PEXP            -0.078946      0.087532     -0.283012     -0.022413     -0.133079      0.045849     -0.083925
PTRNG            0.160897     -0.298708      0.094022      0.502062      0.167917     -0.048576      0.266447
PCOLAT           0.063192     -0.121276      0.141465      0.100992      0.058045      0.027627      0.109088
PINSTF          -0.052621     -0.268292      0.032132      0.015976      0.035518      0.036605      0.144393
PSPST            0.125545     -0.424654      0.115071      0.502609      0.215459     -0.026010      0.379751
PTRCK            0.012946     -0.188496     -0.029851      0.184584      0.052103     -0.070863      0.103325
PTSTG           -0.133609      0.139490     -0.119719     -0.168321     -0.082698     -0.038407     -0.173650
PTRNS            0.061860     -0.048946      0.123664      0.171127      0.122573     -0.038296      0.039104
PREMD            0.093384     -0.217179     -0.012326      0.136180     -0.014018     -0.071353      0.052960
PFLUN           -0.113825      0.081855     -0.022750     -0.059869     -0.030805     -0.121775     -0.246447
PACRD            0.026104     -0.071217      0.086156     -0.032530      0.051117      0.024576      0.092085
PAGTXT          -0.030223     -0.050508      0.075318      0.013288      0.058555     -0.004548      0.038436
PAVTXT           0.159429      0.058184      0.148282      0.002010      0.179547      0.092581      0.143856
PRURUB           0.144450     -0.294226     -0.002567      0.327688      0.084486     -0.017547      0.278740
PPTRAT          -0.042262      0.168801     -0.186437     -0.182147     -0.241724     -0.035417     -0.212461
PENRL            0.049638     -0.330785     -0.042630      0.247291     -0.014470     -0.056707      0.179236
PAGBLD          -0.011173      0.061037      0.156967     -0.003248      0.167866     -0.007682      0.044357
PPUPRM          -0.022750     -0.059763     -0.185631      0.002768     -0.158986     -0.088252     -0.109514
PSEX             0.017008      0.186199      0.012005      0.023881      0.026639     -0.009157     -0.082693
PSREP            0.172680     -0.094074      0.180104      0.117166      0.192930      0.074274      0.278856
TEXP            -0.231115      0.370104     -0.068585     -0.005808     -0.116355      0.039982     -0.235569
TCOND            0.256847      0.099948      0.334444     -0.031410      0.196167      0.242949      0.395425
TLOC             0.047612     -0.143985      0.102621      0.194028      0.195928     -0.039956      0.106407
TSESB            0.371004     -0.105420      0.288929      0.274562      0.407131     -0.014432      0.330075
TTRNG            0.099699     -0.221967      0.079459      0.783674      0.171506     -0.011808      0.172316
TCOLAT           0.266533     -0.116185      0.357669      0.286925      0.341563     -0.003726      0.265642
TRELAC          -0.251529      0.030824     -0.377902     -0.018235     -0.292131     -0.037819     -0.210947
TPRHAB           1.000000      0.064724      0.321727      0.144567      0.326378      0.082923      0.279935
TSEX             0.064724      1.000000     -0.129341     -0.291222     -0.027569      0.025241     -0.259596
TRACE            0.321727     -0.129341      1.000000      0.184641      0.590372      0.100126      0.485730
TSAL             0.144567     -0.291222      0.184641      1.000000      0.309456     -0.093182      0.245287
TVOCAB           0.326378     -0.027569      0.590372      0.309456      1.000000      0.071826      0.402339
SEXPTN           0.082923      0.025241      0.100126     -0.093182      0.071826      1.000000      0.470810
SSES             0.279935     -0.259596      0.485730      0.245287      0.402339      0.470810      1.000000
SSOCON           0.125426     -0.013816      0.300772      0.025137      0.215275      0.726147      0.464923
SATTUD           0.192287     -0.036607      0.410552      0.052569      0.298510      0.719431      0.602674
SFSS             0.184177     -0.092085      0.473724      0.046597      0.302761      0.660189      0.670847
SEDPLN           0.169929     -0.103640      0.174211      0.105019      0.189723      0.685742      0.685686
SHBTS            0.126719     -0.029629      0.247940      0.015317      0.197427      0.815654      0.566680
SACHV            0.282251     -0.180137      0.670994      0.208940      0.506896      0.305673      0.816361
SSEX             0.083108     -0.087556      0.166863      0.070739      0.129769      0.526877      0.398401
SRETHC           0.292200     -0.111417      0.778337      0.064100      0.474291      0.285191      0.680964
PSES             0.237318     -0.206411      0.259368      0.174667      0.204840      0.110959      0.453024
PPTA             0.089596      0.073373      0.012696     -0.051331      0.029910      0.074703      0.069548
PTURN            0.044462      0.011378      0.140556     -0.102208      0.070349      0.060952      0.073132
PTENR            0.095324     -0.170832      0.068726      0.396151      0.126356     -0.029042      0.141049
PTEXM           -0.056082     -0.039184     -0.130859     -0.092033     -0.089490     -0.069367     -0.098282
PWHITE           0.309632     -0.103530      0.802741      0.091061      0.486288      0.216457      0.523397
PPROB           -0.046315     -0.160261     -0.163141      0.076962     -0.108759     -0.078734     -0.091639
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                    9TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                  TPRHAB         TSEX          TRACE          TSAL          TVOCAB        SEXPTN         SSES

PNWENT          0.030776     -0.180290      0.226446      0.325522      0.253588     -0.084004      0.136844
PHMWK          -0.034695     -0.162456     -0.113356     -0.086595     -0.075277      0.023766      0.024896
PHRTCH         -0.041997      0.250666      0.064101     -0.179811     -0.104409      0.023341     -0.159656
TWHUND          0.329952     -0.097569      0.975479      0.173841      0.589352      0.102069      0.474561
TWHITE          0.350632     -0.125648      0.820805      0.021179      0.476708      0.246693      0.536719
THRTCH          0.079978     -0.223558      0.142506      0.252652      0.211338     -0.003604      0.196331
TSIZE           0.209221      0.034353      0.261451      0.105556      0.344566     -0.019091      0.161978
SPTA           -0.010497     -0.045340      0.052831     -0.073607      0.040017      0.653144      0.388212
SKGTN           0.160083     -0.255323      0.238715      0.401964      0.286586      0.324956      0.623104
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                   9TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                    SSOCON        SATTUD        SFSS          SEDPLN        SHBTS         SACHV         SSEX

PPLNT            0.043128      0.065856      0.114108      0.132393      0.084996      0.130946      0.073531
PEXP            -0.015871     -0.047028     -0.108856      0.018345      0.021583     -0.177600     -0.001627
PTRNG           -0.016282      0.019425      0.018992      0.159722      0.019149      0.173789      0.106029
PCOLAT           0.021637      0.033074      0.087329      0.033846      0.019785      0.102716      0.012669
PINSTF           0.033941      0.044177      0.049191      0.061654      0.063465      0.079602      0.084005
PSPST           -0.002563      0.043690      0.041860      0.216804      0.039486      0.244243      0.085510
PTRCK           -0.080502     -0.081370     -0.034098      0.043509     -0.053474      0.021178      0.026434
PTSTG           -0.040414     -0.068316     -0.059057     -0.101275     -0.028244     -0.125116      0.003541
PTRNS           -0.015890     -0.003961     -0.030458      0.032278     -0.032098      0.068725      0.007469
PREMD           -0.063536     -0.073913     -0.068067      0.016517     -0.058136     -0.032651      0.049509
PFLUN           -0.046795     -0.106665     -0.132153     -0.132381     -0.081231     -0.130093     -0.014984
PACRD            0.010775      0.035736      0.075673      0.040002      0.042934      0.124991      0.017174
PAGTXT           0.002782      0.044909      0.013905      0.006715      0.024022      0.082730      0.062536
PAVTXT           0.130935      0.165312      0.109417      0.109345      0.127148      0.168174      0.003621
PRURUB          -0.058185     -0.019764     -0.039830      0.196575     -0.008899      0.110856      0.039367
PPTRAT          -0.163327     -0.210770     -0.180232     -0.153153     -0.147429     -0.271197     -0.013813
PENRL           -0.111580     -0.087579     -0.056478      0.106040     -0.033832      0.035656      0.037641
PAGBLD           0.064370      0.089723      0.064930     -0.039291      0.049973      0.125324      0.061345
PPUPRM          -0.177157     -0.210728     -0.153427     -0.118603     -0.138126     -0.192365      0.002404
PSEX            -0.013333     -0.009960     -0.032640     -0.044945     -0.018280     -0.002044     -0.008415
PSREP            0.080861      0.114857      0.141381      0.191027      0.099029      0.218238      0.070155
TEXP             0.004385     -0.037859     -0.063590     -0.173896     -0.006805     -0.193907     -0.057168
TCOND            0.215788      0.305177      0.340043      0.328815      0.250758      0.407806      0.081846
TLOC             0.037742      0.055855      0.019759      0.112640      0.007151      0.142617      0.012568
TSESB            0.082417      0.137615      0.117849      0.156872      0.078263      0.284341      0.087497
TTRNG            0.029197      0.037931      0.030773      0.083723      0.030077      0.083978      0.051276
TCOLAT           0.101245      0.143362      0.162500      0.145796      0.071279      0.275594      0.105894
TRELAC          -0.072080     -0.130210     -0.165580     -0.081021     -0.062063     -0.260796     -0.028407
TPRHAB           0.125426      0.192287      0.184177      0.169929      0.126719      0.282251      0.083108
TSEX            -0.013816     -0.036607     -0.092085     -0.103640     -0.029629     -0.180137     -0.087556
TRACE            0.300772      0.410552      0.473724      0.174211      0.247940      0.670994      0.166863
TSAL             0.025137      0.052569      0.046597      0.105019      0.015317      0.208940      0.070739
TVOCAB           0.215275      0.298510      0.302761      0.189723      0.197427      0.506896      0.129769
SEXPTN           0.726147      0.719431      0.660189      0.685742      0.815654      0.305673      0.526877
SSE              0.464923      0.602674      0.670847      0.685686      0.566680      0.816361      0.398401
SSOCON           1.000000      0.954910      0.705216      0.560456      0.805690      0.461290      0.489442
SATTUD           0.954910      1.000000      0.751362      0.625332      0.791577      0.637491      0.473875
SFSS             0.705216      0.751362      1.000000      0.556779      0.823495      0.662227      0.627405
SEDPLN           0.560456      0.625332      0.556779      1.000000      0.684363      0.504443      0.406559
SHBTS            0.805690      0.791577      0.823495      0.684363      1.000000      0.458476      0.646617
SACHV            0.461290      0.637491      0.662227      0.504443      0.458476      1.000000      0.280403
SSEX             0.489442      0.473875      0.627405      0.406559      0.646617      0.280403      1.000000
SRETHC           0.452322      0.597774      0.702323      0.285398      0.425476      0.842881      0.268289
PSES             0.098763      0.162988      0.182333      0.248098      0.136172      0.311252      0.088211
PPTA             0.032684      0.041497      0.030971      0.100082      0.042735      0.019827     -0.025301
PTURN            0.073986      0.104738      0.155323      0.035837      0.070858      0.178601      0.067531
PTENR            0.034988      0.047997      0.040691      0.112484      0.026017      0.106715      0.022265
PTEXM           -0.111892     -0.131344     -0.114715     -0.079122     -0.059891     -0.143692     -0.030368
PWHITE           0.320471      0.438183      0.510512      0.182000      0.288638      0.635837      0.164169
PPROB           -0.093289     -0.122236     -0.145541     -0.040675     -0.077563     -0.172182     -0.030203
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                   9TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                    SSOCON        SATTUD        SFSS          SEDPLN        SHBTS         SACHV         SSEX

PNWENT              0.025519      0.053341      0.012979      0.106155      0.020905      0.164688      0.049324
PHMWK               0.021284      0.024224     -0.030363      0.014491      0.017225     -0.038039      0.013852
PHRTCH              0.048088      0.046206      0.051655     -0.102866     -0.019076     -0.035392     -0.072072
TWHUND              0.292344      0.401236      0.466540      0.159245      0.245746      0.661631      0.165696
TWHITE              0.329016      0.448707      0.553745      0.201646      0.310371      0.659789      0.202443
THRTCH              0.009371      0.024458      0.084134      0.099645      0.036958      0.135672      0.091075
TSIZE               0.057311      0.105778      0.102007      0.115507      0.065692      0.264594      0.040884
SPTA                0.541498      0.521509      0.615714      0.527270      0.735194      0.250234      0.524761
SKGTN               0.398531      0.419735      0.468203      0.525511      0.520814      0.462067      0.407075
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                  9TH GRADE - SET 1, 59

CORRELATION MATRIX       SELECTED VARIABLE

                    SRETHC        PSES          PPTA          PTURN         PTENR         PTEXM         PWHITE

PPLNT              0.103772      0.114687      0.029926     -0.009535      0.070168      0.015040      0.121877
PEXP              -0.213952     -0.004234     -0.014188     -0.173736      0.031455      0.084640     -0.251655
PTRNG              0.040416      0.235235     -0.044891     -0.054427      0.363584      0.080474     -0.009026
PCOLAT             0.114032      0.127584     -0.033909      0.038997     -0.041130     -0.006292      0.101685
PINSTF             0.027546      0.067767     -0.075128      0.000693     -0.037695      0.086179      0.017413
PSPST              0.057492      0.328833     -0.034458     -0.079781      0.368516      0.123844      0.044579
PTRCK             -0.050258      0.159733     -0.010853     -0.159964      0.132344      0.085987     -0.056014
PTSTG             -0.108334     -0.191299      0.032492      0.051039     -0.177808     -0.061460     -0.146707
PTRNS              0.032025      0.062133     -0.034480      0.168679      0.079659      0.047928      0.004729
PREMD             -0.070325      0.087652     -0.007337     -0.055943      0.127619      0.040570     -0.093124
PFLUN             -0.149914     -0.293229     -0.048811      0.052688      0.029840      0.019429     -0.220993
PACRD              0.085782      0.138032     -0.069415     -0.027923     -0.057169      0.022660      0.118741
PAGTXT             0.062440      0.028065      0.030111      0.110322     -0.017468     -0.005149      0.060004
PAVTXT             0.140440      0.016737      0.031373      0.058061      0.081032     -0.020440      0.129525
PRURUB            -0.044468      0.362220      0.000858     -0.162827      0.274043      0.192484     -0.061211
PPTRAT            -0.158239      0.061001      0.055109     -0.118670     -0.156530      0.044731     -0.161217
PENRL             -0.056957      0.254290     -0.070165     -0.108928      0.206978      0.251440     -0.091848
PAGBLD             0.117663      0.001234     -0.051578     -0.003322      0.026232      0.034911      0.171376
PPUPRM            -0.161705      0.099684     -0.038793     -0.104563     -0.040146      0.091381     -0.167644
PSEX              -0.005014     -0.051553      0.148801     -0.060160      0.004365     -0.029410     -0.018822
PSREP              0.188471      0.290929      0.118133     -0.146388      0.061862     -0.090777      0.211043
TEXP              -0.068541     -0.166254     -0.082329     -0.087241     -0.072011     -0.046691     -0.024711
TCOND              0.408366      0.264109      0.247472     -0.001891      0.000204     -0.111967      0.434245
TLOC               0.065719     -0.007954     -0.041166      0.179836      0.040383     -0.134230      0.048367
TSESB              0.211090      0.302894      0.008887     -0.068988      0.082806      0.004076      0.242310
TTRNG              0.027687      0.152298     -0.030319     -0.156196      0.358378     -0.127731      0.059442
TCOLAT             0.251944      0.219128      0.028916      0.087366      0.095657      0.030377      0.261518
TRELAC            -0.311382     -0.132046      0.051582     -0.008867     -0.101379     -0.055088     -0.320158
TPRHAB             0.292200      0.237318      0.089596      0.044462      0.095324     -0.056082      0.309632
TSEX              -0.111417     -0.206411      0.073373      0.011378     -0.170832     -0.039184     -0.103530
TRACE              0.778337      0.259368      0.012696      0.140556      0.068726     -0.130859      0.802741
TSAL               0.064100      0.174667     -0.051321     -0.102208      0.396151     -0.092033      0.091061
TVOCAB             0.474291      0.204840      0.029910      0.070349      0.126356     -0.089490      0.486288
SEXPTN             0.285191      0.110909      0.074708      0.060952     -0.029042     -0.069367      0.216457
SSES               0.680964      0.453024      0.069548      0.073132      0.141049     -0.098282      0.523397
SSOCON             0.452322      0.098763      0.032684      0.073986      0.034988     -0.111892      0.320471
SATTUD             0.597774      0.162988      0.041497      0.104738      0.047997     -0.131344      0.438163
SFSS               0.702323      0.182333      0.030971      0.155323      0.040691     -0.114715      0.510512
SEDPLN             0.285398      0.248098      0.100082      0.035837      0.112484     -0.079122      0.182000
SHBTS              0.425476      0.136172      0.042735      0.070858      0.026017     -0.059891      0.288638
SACHV              0.842881      0.311252      0.019827      0.178601      0.106715     -0.143692      0.635837
SSEX               0.268289      0.088211     -0.025301      0.067531      0.022265     -0.030368      0.164169
SRETHC             1.000000      0.282043      0.029823      0.164844      0.038448     -0.131201      0.767475
PSES               0.282043      1.000000      0.104648     -0.064696      0.064602      0.049998      0.356700
PPTA               0.029823      0.104648      1.000000     -0.013515      0.050123      0.033907      0.035136
PTURN              0.164844     -0.064696     -0.013515      1.000000     -0.064990     -0.035110      0.147535
PTENR              0.038448      0.064602      0.050123     -0.064990      1.000000     -0.029199     -0.016032
PTEXM             -0.131201      0.049998      0.033907     -0.035110     -0.029199      1.000000     -0.173298
PWHITE             0.767475      0.356700      0.035136      0.147535     -0.016032     -0.173298      1.000000
PPROB             -0.222981     -0.103080     -0.126480     -0.055665      0.028302      0.166946     -0.279731
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                          9TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                    SRETHC        PSES          PPTA          PTURN         PTENR         PTEXM         PWHITE

PNWENT            0.077610      0.063012     -0.048414     -0.028847      0.205495      0.049674      0.030036
PHMWK            -0.066849      0.099152     -0.012818     -0.061133      0.029020      0.078374     -0.096717
PHRTCH            0.051424     -0.175190      0.065267      0.035592     -0.199650     -0.097424      0.111052
TWHUND            0.768242      0.263325      0.001476      0.121412      0.053855     -0.107043      0.789146
TWHITE            0.805433      0.318418      0.064976      0.174176      0.016368     -0.148208      0.847398
THRTCH            0.076170      0.213557     -0.059615     -0.056496      0.014431      0.029600      0.081405
TSIZE             0.217202      0.086766      0.006252      0.048588     -0.006372     -0.105402      0.237528
SPTA              0.196913     -0.003183      0.072135      0.027999     -0.037475     -0.052195      0.094379
SKGTN             0.278633      0.198402      0.009179     -0.001072      0.259431     -0.084812      0.165998
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                     9TH GRADE - SET 1, 59

CORRELATION MATRIX       SELECTED VARIABLE

                      PPROB        PNWENT         PHMWK        PHRTCH        TWHUND        TWHITE        THRTCH

PPLNT              0.070099     -0.003466      0.245322     -0.229715      0.084227      0.107212      0.151175
PEXP               0.067979     -0.024830      0.076908     -0.128078     -0.273305     -0.223563      0.009550
PTRNG              0.170637      0.337618      0.136435     -0.501983      0.098366      0.020449      0.201102
PCOLAT             0.038382     -0.015205     -0.032720      0.025438      0.127260      0.102120      0.075786
PINSTF             0.181067      0.038318      0.440890     -0.304151      0.031793      0.034277      0.146899
PSPST              0.219073      0.392130      0.175132     -0.488585      0.117179      0.031867      0.279193
PTRCK              0.126603      0.177704      0.162938     -0.234363     -0.022429     -0.077117      0.135928
PTSTG             -0.004003     -0.161913      0.086107      0.177360     -0.121503     -0.097652     -0.131770
PTRNS              0.110570      0.218430     -0.114744     -0.008154      0.134011      0.025688     -0.035587
PREMD              0.207584      0.124555      0.114464     -0.127607      0.006304     -0.036251      0.090077
PFLUN              0.040224      0.045870     -0.021858      0.110176     -0.007852     -0.187296     -0.172010
PACRD              0.037187     -0.001374      0.141156      0.004959      0.092656      0.115999      0.133168
PAGTXT            -0.018926      0.038804      0.045566     -0.023934      0.071426      0.062528      0.027559
PAVTXT            -0.025834      0.033053      0.041998     -0.065740      0.138002      0.146626      0.057864
PRURUB             0.225602      0.297145      0.016355     -0.251670      0.013604     -0.068027      0.197869
PPTRAT            -0.072679     -0.153163     -0.130456      0.007274     -0.182995     -0.144875      0.005816
PENRL              0.219648      0.283172      0.220330     -0.423512     -0.028602     -0.071547      0.197501
PAGBLD            -0.042857      0.197576     -0.045558      0.089077      0.153823      0.120977     -0.024954
PPUPRM             0.034483     -0.007866     -0.081161     -0.087380     -0.184121     -0.146793      0.100395
PSEX              -0.144831      0.033460     -0.214374      0.212967      0.012164     -0.021764     -0.042224
PSREP             -0.120618      0.025897      0.119350     -0.040445      0.155795      0.176024      0.091411
TEXP              -0.065979     -0.135980     -0.078520      0.167457     -0.042744     -0.064946     -0.257525
TCOND             -0.294747     -0.104058     -0.011556      0.129288      0.308840      0.443399     -0.027941
TLOC              -0.015165      0.134060     -0.044153     -0.042411      0.083798      0.028082      0.105863
TSESB             -0.002481      0.184030      0.032169     -0.144928      0.284849      0.237493      0.216108
TTRNG             -0.040363      0.164575     -0.064360     -0.171776      0.073979     -0.002631      0.177916
TCOLAT            -0.004706      0.264797     -0.090373     -0.035221      0.334302      0.274279      0.066479
TRELAC             0.004393     -0.088739      0.066766     -0.096177     -0.383081     -0.317240     -0.054766
TPRHAB            -0.046315      0.030776     -0.034495     -0.041997      0.329952      0.350632      0.079978
TSEX              -0.160261     -0.180290     -0.162456      0.250666     -0.097569     -0.125648     -0.223558
TRACE             -0.163141      0.226446     -0.113356      0.064101      0.975479      0.820805      0.142506
TSAL               0.076962      0.325522     -0.086595     -0.179811      0.173841      0.021179      0.252662
TVOCAB            -0.108759      0.253588     -0.075277     -0.104409      0.589352      0.476708      0.211338
SEXPTN            -0.078734     -0.084004      0.023766      0.023341      0.102069      0.246693     -0.003604
SSES              -0.091639      0.136844      0.024898     -0.159656      0.474561      0.536739      0.196361
SSOCON            -0.093289      0.025519      0.021284      0.048088      0.292344      0.329016      0.009371
SATTUD            -0.122236      0.053341      0.024224      0.046206      0.401236      0.448707      0.024458
SFSS              -0.145541      0.012979     -0.030363      0.051655      0.466540      0.553745      0.084134
SEDPLN            -0.040675      0.106155      0.014491     -0.102866      0.159245      0.201646      0.099645
SHBTS             -0.077563      0.020905      0.017225     -0.019076      0.245746      0.310371      0.036958
SACHV             -0.172182      0.164688     -0.038039     -0.035392      0.661631      0.659789      0.135672
SSEX              -0.030203      0.049324      0.013852     -0.072072      0.165696      0.202443      0.091006
SRETHC            -0.222981      0.077610     -0.066849      0.051424      0.768242      0.805433      0.076170
PSES              -0.103080      0.063012      0.099152     -0.175190      0.263325      0.318418      0.213557
PPTA              -0.126480     -0.048414     -0.012818      0.065267      0.001476      0.064976     -0.059615
PTURN             -0.055665     -0.028847     -0.061133      0.035592      0.121412      0.174176     -0.056496
PTENR              0.028302      0.205495      0.029020     -0.199650      0.053855      0.016368      0.014431
PTEXM              0.166946      0.049674      0.078374     -0.097424     -0.107043     -0.148208      0.029600
PWHITE            -0.279731      0.030006     -0.096717      0.111052      0.789146      0.847398      0.081405
PPROB              1.000000      0.195263      0.067611     -0.137909     -0.134578     -0.242809      0.001000
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE
                                                                    9TH GRADE - SET 1, 59
CORRELATION MATRIX      SELECTED VARIABLE

                         PPROB          PNWENT          PHMWK          PHRTCH          TWHUND          TWHITE          THRTCH

PNWENT                0.195263        1.000000      -0.094137      -0.146760        0.219509      -0.005305        0.077841
PHMWK                 0.067611       -0.094137       1.000000      -0.163192       -0.121627      -0.054858        0.113997
PHRTCH               -0.137909       -0.146760      -0.163192       1.000000        0.066093       0.052952       -0.265556
TWHUND               -0.134578        0.219509      -0.121627       0.066093        1.000000       0.816766        0.150765
TWHITE               -0.242809       -0.005305      -0.054858       0.052952        0.816766       1.000000        0.088983
THRTCH                0.001000        0.077841       0.113997      -0.265556        0.150765       0.088983        1.000000
TSIZE                -0.128979        0.099744      -0.079142      -0.019881        0.276916       0.237799        0.007976
SPTA                 -0.036066       -0.007582      -0.003861       0.057152        0.050832       0.119652        0.008094
SKGTN                 0.038733        0.289089      -0.009874      -0.206960        0.210840       0.166889        0.171262
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                              9TH GRADE - SET 1, 59

CORRELATION MATRIX      SELECTED VARIABLE

                          TSIZE          SPTA          SKGTN

PPLNT                 -0.033151      0.052579       0.116269
PEXP                  -0.078118      0.040701      -0.055289
PTRNG                  0.061025     -0.072474       0.354749
PCOLAT                 0.000943      0.034440       0.068299
PINSTF                -0.086649      0.018213       0.096794
PSPST                  0.065018     -0.042941       0.463335
PTRCK                  0.003268     -0.053893       0.142611
PTSTG                 -0.075404     -0.016304      -0.117130
PTRNS                  0.110745     -0.046483       0.062292
PREMD                  0.049985     -0.071080       0.154524
PFLUN                  0.006004     -0.030681      -0.077521
PACRD                  0.010555      0.011536      -0.007953
PAGTXT                -0.045384     -0.007337       0.011481
PAVTXT                 0.084462      0.097590       0.095220
PRURUB                -0.007117     -0.035599       0.326841
PPTRAT                -0.107789     -0.094304      -0.207155
PENRL                 -0.090138     -0.042399       0.227712
PAGBLD                 0.033253      0.008520       0.053014
PPUPRM                -0.150106     -0.096699      -0.055193
PSEX                   0.100959      0.025096      -0.000255
PSREP                  0.022907      0.043970       0.165641
TEXP                  -0.160344     -0.021153      -0.224978
TCOND                  0.146117      0.145505       0.135379
TLOC                   0.123789     -0.061239       0.082084
TSESB                  0.235513     -0.047902       0.248434
TTRNG                  0.041541     -0.046539       0.262432
TCOLAT                 0.178576     -0.027209       0.244067
TRELAC                -0.114469     -0.005046      -0.099786
TPRHAB                 0.209221     -0.010497       0.160083
TSEX                   0.034353     -0.045340      -0.255323
TRACE                  0.261451      0.052831       0.238715
TSAL                   0.106556     -0.073607       0.401964
TVOCAB                 0.344566      0.040017       0.286586
SEXPTN                -0.019091      0.653144       0.324966
SSES                   0.161978      0.388212       0.623164
SSOCON                 0.057311      0.541498       0.398531
SATTUD                 0.105778      0.521509       0.419735
SFSS                   0.102007      0.615714       0.468203
SEDPLN                 0.115507      0.527270       0.525511
SHBTS                  0.065692      0.735194       0.520814
SACHV                  0.264594      0.250234       0.462067
SSEX                   0.040884      0.524761       0.407075
SRETHC                 0.217202      0.196913       0.278633
PSES                   0.086766     -0.003183       0.198402
PPTA                   0.006252      0.072135       0.009179
PTURN                  0.048588      0.027999      -0.001072
PTENR                 -0.006372     -0.037475       0.259431
PTEXM                 -0.105402     -0.052195      -0.084812
PWHITE                 0.237528      0.094379       0.165998
PPROB                 -0.128979     -0.036066       0.038733
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                          9TH GRADE - SET 1, 59

CORRELATION MATRIX       SELECTED VARIABLE

                          TSIZE          SPTA           SKGTN

PNWENT                 0.099744      -0.007582       0.289089
PHMWK                 -0.079142      -0.003861      -0.009874
PHRTCH                -0.019881       0.057152      -0.206960
TWHUND                 0.276916       0.050832       0.210840
TWHITE                 0.237799       0.119652       0.166889
THRTCH                 0.007976       0.008094       0.171262
TSIZE                  1.000000      -0.043794       0.138552
SPTA                  -0.043794       1.000000       0.373484
SKGTN                  0.138552       0.373484       1.000000
```

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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                  9TH GRADE - SET 2, 43+16

SELECTED VARIABLE


THE NUMBER OF OBSERVATIONS IS      20561.

VARIABLE          SUMS        SUMS OF SQUARES            MEAN          SIGMA(N)        SIGMA(N-1)
PLGRD          17207.4258        16544.6948              0.8369          0.3229          0.3229
PPTST           1066.9216        23151.4019              0.0519          1.0599          1.0599
PASGN          -3273.8405        19408.0698             -0.1592          0.9584          0.9584
PDATTN         -6140.6377        24741.2578             -0.2987          1.0555          1.0555
PPRSLR         -5080.1730        19186.9673             -0.2471          0.9339          0.9339
PCRED           3466.6312        22088.3477              0.1686          1.0227          1.0227
TCRED           -758.2915         8079.5729             -0.0369          0.6258          0.6258
TASGN           6911.6248        10561.1631              0.3362          0.6330          0.6330
TINST           1996.7065         9329.5549              0.0971          0.6666          0.6666
THONOR          1276.6804         7482.4820              0.0621          0.6000          0.6001
SAGE           -2281.8664         3026.0498             -0.1110          0.3672          0.3672
SFORPT         -1605.9656         5764.3732             -0.0781          0.5237          0.5237
SFORST         -3378.6129         4457.0405             -0.1643          0.4356          0.4356
PFNURS          -182.2790        22151.0625             -0.0089          1.0379          1.0379
PCOMPL         -4462.2619        26101.4824             -0.2170          1.1056          1.1056
PLNDAY          9614.6940        19096.3833              0.4676          0.8427          0.8427
```

FACTOR ANALYSIS - MERGED DATA
9TH GRADE

9TH GRADE - SET 2, 43+16

CORRELATION MATRIX SELECTED VARIABLE

	PPLNT	PEXP	PTRNG	PCOLAT	PINSTF	PSPST	PTRCK
PPLNT	1.000000	-0.021839	0.133978	0.034889	0.383229	0.276224	0.170435
PEXP	-0.021839	1.000000	0.045182	-0.059076	0.022431	0.046309	0.069497
PTRNG	0.133978	0.045182	1.000000	0.138874	0.232689	0.649600	0.235883
PCOLAT	0.034889	-0.059076	0.138874	1.000000	0.068175	0.068691	-0.017737
PINSTF	0.383229	0.022431	0.232689	0.068175	1.000000	0.305531	0.192494
PSPST	0.276224	0.046309	0.649600	0.068691	0.305531	1.000000	0.371107
PTRCK	0.170435	0.069497	0.235683	-0.017737	0.192494	0.371107	1.000000
PTSTG	0.046258	0.016003	-0.218042	0.052765	0.243555	-0.286097	-0.115306
PTRNS	0.019966	-0.145128	0.228496	0.109587	-0.003880	0.228965	-0.008915
PREMD	-0.000649	-0.013273	0.237994	0.012568	-0.001054	0.319575	0.376571
PFLUN	0.043709	-0.081835	-0.087175	-0.020558	0.030102	-0.161411	-0.051981
PACRD	0.000127	-0.019513	-0.032697	0.115142	0.238259	0.015672	0.008638
PAGTXT	0.048834	0.039970	0.021178	0.075296	0.087291	0.066665	-0.037973
PAVTXT	0.054288	0.076143	0.031921	-0.075522	0.162321	0.100571	-0.039517
PRURUB	0.037172	0.078110	0.442244	0.021959	-0.010952	0.624982	0.209940
PPTRAT	-0.100865	0.099192	-0.200269	-0.032461	-0.197740	-0.168306	0.002389
PENRL	0.217566	0.127355	0.489845	0.043525	0.321129	0.686309	0.275818
PAGBLD	-0.007660	-0.037080	-0.082913	-0.127849	-0.016889	0.013451	-0.020700
PPUPRM	-0.027022	0.027971	-0.000324	0.072110	-0.014476	0.106886	0.096664
PSEX	-0.058241	0.108204	-0.102043	-0.004110	-0.079859	0.020701	-0.025082
PSREP	0.153786	0.084902	0.144584	0.107468	0.148592	0.242052	0.127093
TEXP	-0.066848	0.127775	-0.202666	-0.097471	-0.097978	-0.377260	-0.192915
TCOND	0.110488	-0.096118	0.019278	0.057681	-0.050735	-0.377473	-0.066568
TLOC	0.031149	-0.150886	0.077585	0.058389	-0.017497	0.084296	0.055751
TSESB	0.098416	-0.129083	0.311812	0.135633	0.093822	0.376305	0.128559
TTRNG	0.022359	0.035408	0.421379	0.056389	0.021345	0.390888	0.149873
TCOLAT	0.039834	-0.114324	0.217742	0.171521	0.043603	0.241707	0.081981
TRELAC	-0.025034	0.081615	-0.028688	-0.120784	0.084558	-0.109917	-0.051441
TPRHAB	0.145136	-0.083808	0.211789	0.077141	0.035006	0.175652	0.030490
TSEX	-0.079564	0.104412	-0.281716	-0.119922	-0.140588	-0.440376	-0.178477
TRACE	0.113446	-0.297440	0.114910	0.153003	0.090685	0.144487	-0.024389
TSAL	0.077210	-0.021647	0.577274	0.115844	0.124803	0.597804	0.214640
TVOCAB	0.100482	-0.139801	0.192310	0.064527	0.084348	0.255204	0.061807
SEXPTN	0.119959	0.059942	-0.081007	0.032803	-0.004414	-0.054618	-0.104770
SSES	0.232624	-0.107541	0.307193	0.127395	0.099936	0.451997	0.111516
SSOCON	0.038429	-0.021386	-0.029814	0.025498	0.011148	-0.013296	-0.109772
SATTUD	0.062845	-0.060581	0.013267	0.038331	0.012449	0.042692	-0.110554
SFSS	0.160259	-0.143977	0.024439	0.115012	0.079466	0.056172	-0.046390
SEDPLN	0.119911	0.020550	0.178562	0.035358	-0.029400	0.249799	0.039222
SHBTS	0.102526	0.028218	0.015000	0.023792	0.060837	0.042482	-0.079926
SACHV	0.167103	-0.215968	0.211245	0.123957	0.108899	0.305760	0.023948
SSEX	0.083606	-0.003025	0.132410	0.014021	0.107926	0.105408	0.029415
SRETHC	0.152987	-0.257225	0.058693	0.139914	0.073253	0.084795	-0.056382
PFNURS	-0.037395	-0.043887	0.145132	-0.154026	-0.012038	0.070128	0.055612
PCOMPL	0.064131	-0.117986	0.212975	0.059900	-0.012227	0.300554	0.046842
PLNDAY	0.142666	-0.049959	-0.183543	0.009482	0.072898	-0.110611	-0.120065
PLGRD	0.099984	0.017754	0.022925	0.027795	0.388664	0.100120	0.019367
PPTST	0.035279	0.053849	-0.066487	-0.105037	-0.015587	-0.086348	0.024903
PASGN	0.066012	-0.020711	0.235761	0.063832	-0.142525	0.271289	0.011410
PDATTN	0.125849	-0.095687	-0.045570	-0.021241	-0.040121	-0.053895	-0.073821

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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                    9TH GRADE - SET 2, 43+16

CORRELATION MATRIX      SELECTED VARIABLE

                    PPLNT         PEXP          PTRNG         PCOLAT        PINSTF        PSPST         PTRCK

PPRSLR            0.088927     -0.052231      0.096944     -0.028605     -0.108952      0.068590     -0.015814
PCRED             0.043772      0.145021      0.195153      0.049360      0.129359      0.254328      0.140114
TCRED             0.135109      0.003607      0.401084      0.049190      0.127756      0.431132      0.223952
TASGN            -0.022607     -0.183024     -0.258022      0.032919      0.054180     -0.233312     -0.163046
TINST             0.018025      0.047937      0.117877      0.023665     -0.030712      0.058151      0.103613
THONOR            0.005664     -0.063917      0.057704     -0.091993      0.043007      0.026550      0.027083
SAGE              0.154926     -0.046877      0.145217      0.041400      0.004884      0.204491      0.039309
SFORPT            0.042296     -0.012146     -0.161053      0.007638      0.009631     -0.180330     -0.166957
SFORST            0.141222     -0.011610      0.105061      0.038216      0.108784      0.185718      0.002125
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE

9TH GRADE - SET 2, 43+16

CORRELATION MATRIX SELECTED VARIABLE

	PTSTG	PTRNS	PREMD	PFLUN	PACRD	PAGTXT	PAVTXT
PPLNT	0.046258	0.019966	-0.000649	0.043709	0.000127	0.048834	0.054288
PEXP	0.016003	-0.145128	-0.013273	-0.081835	-0.019513	0.039970	0.076143
PTRNG	-0.218042	0.228496	0.237994	-0.087175	-0.032697	0.021178	0.031921
PCOLAT	0.052765	0.109587	0.012568	-0.020558	0.115142	0.075296	-0.075522
PINSTF	0.243555	-0.003880	-0.001054	0.030102	0.238259	0.087291	0.162321
PSPST	-0.286097	0.228965	0.319575	-0.161411	0.015672	0.066665	0.100571
PTRCK	-0.115306	-0.008915	0.376571	-0.051981	0.008638	-0.037973	-0.039517
PTSTG	1.000000	-0.062116	-0.103355	0.165394	0.142908	0.005074	-0.057554
PTRNS	-0.062116	1.000000	0.165480	0.178426	-0.003589	-0.092837	-0.017110
PREMD	-0.103355	0.165480	1.000000	0.051191	-0.092071	0.091563	-0.074598
PFLUN	0.165394	0.178426	0.051191	1.000000	-0.048432	-0.089171	-0.078518
PACRD	0.142908	-0.003589	-0.092071	-0.048432	1.000000	0.070239	0.124107
PAGTXT	0.005074	-0.092837	0.091563	-0.089171	0.070239	1.000000	0.002981
PAVTXT	-0.057554	-0.017110	-0.074598	-0.078518	0.124107	0.002981	1.000000
PRURUB	-0.315594	0.201596	0.276452	-0.158627	0.075671	0.047039	0.032655
PPTRAT	0.033448	-0.048503	0.025666	-0.064305	-0.120891	-0.164788	-0.163214
PENRL	-0.206811	0.160782	0.216167	-0.102481	0.020722	-0.046374	-0.007462
PAGBLD	-0.006003	-0.069966	-0.026632	0.002713	0.045282	0.137569	0.033043
PPUPRM	-0.001217	0.029044	0.072720	-0.097628	-0.011860	-0.158268	-0.100324
PSEX	0.045347	-0.014097	-0.013248	-0.026604	0.067625	0.096478	0.030402
PSREP	-0.046007	-0.030299	0.050853	-0.194208	0.148385	-0.022058	0.073138
TEXP	0.164903	-0.175882	-0.197461	0.012508	-0.078464	-0.007746	-0.060654
TCOND	-0.021778	-0.095353	-0.046472	-0.209930	0.045434	0.038255	0.099328
TLOC	-0.090379	0.202300	0.014793	0.081930	0.032266	0.093596	0.073884
TSESB	-0.119543	0.140013	0.169384	-0.104159	0.033971	0.017326	0.145279
TTRNG	-0.152276	0.071510	0.125684	-0.112549	-0.045957	0.062511	-0.005696
TCOLAT	-0.097995	0.171643	0.094662	-0.030984	0.055701	0.032757	0.046128
TRELAC	0.122363	-0.054194	-0.092014	0.031500	-0.032976	-0.092376	-0.049275
TPRHAB	-0.143241	0.048974	0.125119	-0.118256	0.046633	-0.011156	0.175721
TSEX	0.181645	-0.097065	-0.195862	0.106590	-0.073136	-0.093230	0.051243
TRACE	-0.131653	0.124114	-0.005797	-0.020978	0.108038	0.123249	0.156972
TSAL	-0.176525	0.170799	0.168308	-0.058563	-0.020340	0.070782	0.000330
TVOCAB	-0.086750	0.123803	-0.011187	-0.030023	0.068567	0.106575	0.190281
SEXPTN	-0.062615	-0.040554	-0.111351	-0.167338	0.032772	-0.012029	0.125662
SSES	-0.236552	0.072262	0.038967	-0.314429	0.136245	0.088179	0.181936
SSOCON	-0.064421	-0.014348	-0.094081	-0.062622	0.014754	0.009342	0.170570
SATTUD	-0.101365	0.004203	-0.108860	-0.137704	0.051025	0.075684	0.210972
SFSS	-0.088696	-0.038989	-0.096049	-0.175179	0.112398	0.037846	0.145397
SEDPLN	-0.146464	0.063855	-0.004927	-0.176590	0.060442	0.008046	0.142176
SHBTS	-0.050904	-0.035151	-0.091042	-0.113455	0.061826	0.040819	0.174587
SACHV	-0.160500	0.088394	-0.046542	-0.158914	0.178117	0.151379	0.205733
SSEX	0.000623	0.016178	0.057574	-0.021696	0.022003	0.107046	0.003319
SRETHC	-0.136874	0.034251	-0.082826	-0.179044	0.122112	0.119553	0.170055
PFNURS	0.120455	0.056100	0.023830	0.209591	-0.034776	-0.041145	-0.037708
PCOMPL	-0.097928	0.068277	0.025968	-0.062437	0.031379	0.083178	0.087077
PLNDAY	0.164203	-0.072835	-0.106491	-0.016097	0.018247	-0.010276	-0.017046
PLGRD	0.030557	0.009613	-0.011738	-0.003335	0.090226	0.091703	0.179069
PPTST	0.026100	-0.076289	0.091565	-0.035797	-0.012201	0.027207	0.042631
PASGN	-0.172274	0.019073	-0.006081	-0.151095	0.045415	0.185726	0.094197
PDATTN	-0.078897	-0.091091	-0.080987	-0.127832	0.072070	-0.038405	0.135577

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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                     9TH GRADE - SET 2, 43+16

CORRELATION MATRIX      SELECTED VARIABLE

                   PTSTG          PTRNS          PREMD          PFLUN          PACRD          PAGTXT         PAVTXT

PPRSLR           -0.104106       0.054311      -0.004803      -0.005223      -0.123988      -0.020794       0.077152
PCRED             0.014997       0.007551       0.097604      -0.079665       0.038542       0.032505       0.106607
TCRED            -0.118146       0.094891       0.172865      -0.013215      -0.030323       0.084928      -0.025362
TASGN             0.088430      -0.038054      -0.123427       0.134597      -0.027063      -0.002888       0.057385
TINST            -0.046551      -0.037655       0.074127       0.001534       0.001172       0.045327      -0.022009
THONOR            0.010295       0.074015       0.053102      -0.022392       0.153991      -0.012799       0.080605
SAGE             -0.192430      -0.018347       0.004959      -0.274156       0.036417       0.100801       0.112748
SFORPT            0.050253      -0.101103      -0.133181      -0.198865       0.081289      -0.035761       0.081233
SFORST           -0.027729      -0.009558      -0.030921      -0.126182       0.047206      -0.001538       0.098837
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE

9TH GRADE - SET 2, 43+16

CORRELATION MATRIX   SELECTED VARIABLE

	PRURUB	PPTRAT	PENRL	PAGBLD	PPUPRM	PSEX	PSREP
PPLNT	0.037172	-0.100865	0.217566	-0.007660	-0.027022	-0.058241	0.153786
PEXP	0.078110	0.099192	0.127355	-0.037080	0.027971	0.108204	0.084902
PTRNG	0.442244	-0.200269	0.489845	-0.082913	-0.000324	-0.102043	0.144584
PCOLAT	0.021959	-0.032461	0.043525	-0.127849	0.072110	-0.004110	0.107468
PINSTF	-0.010952	-0.197740	0.321129	-0.016889	-0.014475	-0.079859	0.148592
PSPST	0.624982	-0.168306	0.686309	0.013451	0.106886	0.020701	0.242052
PTRCK	0.209940	0.002389	0.275818	-0.020700	0.096664	-0.025082	0.127093
PTSTG	-0.315594	0.033448	-0.206811	-0.006003	-0.001217	0.045347	-0.046007
PTRNS	0.201596	-0.048503	0.160782	-0.069966	0.029044	-0.014097	-0.030299
PREMD	0.276452	0.025666	0.216167	-0.026632	0.072720	-0.013248	0.050853
PFLUN	-0.158627	-0.064305	-0.102481	0.002713	-0.097628	-0.026604	-0.194208
PACRD	0.075671	-0.120891	0.020722	0.045282	-0.011860	0.067625	0.148385
PAGTXT	0.047039	-0.164788	-0.046374	0.137569	-0.158268	0.096478	-0.022058
PAVTXT	0.032655	-0.163214	-0.007462	0.033040	-0.100324	0.030402	0.073138
PRURUB	1.000000	-0.012408	0.553161	0.041933	0.121567	0.014247	0.166124
PPTRAT	-0.012408	1.000000	0.179409	-0.150441	0.592066	0.023698	-0.021144
PENRL	0.553161	0.179409	1.000000	-0.077708	0.404724	0.011186	0.167276
PAGBLD	0.041933	-0.150441	-0.077708	1.000000	-0.068869	0.095706	-0.117608
PPUPRM	0.121567	0.592066	0.404724	-0.068869	1.000000	0.033075	-0.007907
PSEX	0.014247	0.023698	0.011186	0.095706	0.033075	1.000000	0.025292
PSREP	0.166124	-0.021144	0.167276	-0.117608	-0.007907	0.025292	1.000000
TEXP	-0.305697	0.044836	-0.246185	0.174762	-0.084447	-0.006044	-0.123126
TCOND	-0.063604	-0.039284	-0.072307	-0.070196	-0.096249	-0.015862	0.348965
TLOC	0.016826	-0.136254	-0.102843	-0.146625	-0.095424	-0.062078	-0.003218
TSESB	0.278029	-0.123583	0.158681	0.070450	-0.014665	-0.094586	0.245007
TTRNG	0.257393	-0.086564	0.177954	-0.027300	-0.014837	-0.048623	0.156061
TCOLAT	0.231665	-0.041231	0.150149	-0.014137	0.074105	-0.011230	0.152754
TRELAC	-0.129851	0.079744	-0.028397	-0.147997	0.083430	-0.058081	-0.010499
TPRHAB	0.156515	-0.091780	0.090592	-0.015490	-0.039776	-0.062218	0.187605
TSEX	-0.338407	0.105898	-0.308974	0.061665	-0.099029	0.066034	-0.109669
TRACE	-0.004279	-0.225627	-0.030756	0.164225	-0.203625	-0.020957	0.189240
TSAL	0.353263	-0.244032	0.305244	-0.006375	-0.010068	-0.047652	0.124607
TVOCAB	0.088319	-0.284769	-0.002407	0.176482	-0.174921	0.002028	0.203519
SEXPTN	-0.021857	-0.025576	-0.097687	-0.008500	-0.110835	0.041974	0.100680
SSES	0.350539	-0.229074	0.191651	0.058767	-0.120774	-0.024687	0.348980
SSOCON	-0.074174	-0.206942	-0.159406	0.084124	-0.225198	0.013594	0.104946
SATTUD	-0.023591	-0.259114	-0.129224	0.114630	-0.260689	0.028807	0.145692
SFSS	-0.052548	-0.246515	-0.079099	0.085984	-0.202807	-0.037683	0.136856
SEDPLN	0.255308	-0.160338	0.103976	-0.046926	-0.137337	0.025886	0.246334
SHBTS	-0.010865	-0.192356	-0.061630	0.069352	-0.182974	0.016062	0.135532
SACHV	0.135090	-0.339659	0.040481	0.152557	-0.233061	0.009874	0.265161
SSEX	0.052199	-0.004892	0.039347	0.080871	0.007876	0.031265	0.091872
SRETHC	-0.054777	-0.212207	-0.060911	0.140990	-0.200264	-0.028553	0.226745
PFNURS	-0.111422	-0.060893	-0.070374	-0.153054	-0.087042	-0.026422	0.052509
PCOMPL	0.159692	-0.247956	0.079783	0.205143	-0.091523	0.028536	0.138940
PLNDAY	-0.093106	0.031573	-0.131786	-0.075586	-0.030864	-0.071721	0.132558
PLGRD	-0.023282	-0.097716	0.116005	-0.038571	-0.059070	-0.088320	0.084293
PPTST	-0.020492	-0.042256	-0.067408	-0.018431	-0.053942	-0.030324	0.016425
PASGN	0.338222	-0.029640	0.180354	0.064141	0.040701	-0.032990	0.184962
PDATTN	-0.101608	-0.173745	-0.193004	0.047242	-0.253524	-0.098839	0.271133

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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                          9TH GRADE - SET 2, 43+16

CORRELATION MATRIX      SELECTED VARIABLE

                      PRURUB         PPTRAT          PENRL         PAGBLD         PPUPRM           PSEX          PSREP

PPRSLR              0.055863      -0.049659      -0.075571      -0.052288      -0.054836      -0.007061       0.030987
PCRED               0.152593      -0.028673       0.191588      -0.084187       0.080420       0.001533       0.150204
TCRED               0.297675      -0.124955       0.316761       0.029899       0.056487      -0.048716       0.020676
TASGN              -0.255092      -0.117115      -0.260147      -0.002202      -0.173734       0.000194      -0.080546
TINST               0.085244       0.079512       0.067705      -0.007742       0.058065      -0.005245       0.077153
THONOR             -0.039311       0.009185       0.047449      -0.084801       0.075188      -0.082104       0.132706
SAGE                0.187645      -0.196548       0.059356       0.135687      -0.131870       0.025957       0.200467
SFORPT             -0.134378      -0.004041      -0.203468      -0.011457      -0.079308      -0.020278       0.061612
SFORST              0.085522      -0.181675       0.029892      -0.001350      -0.138820      -0.010364       0.151627
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                    9TH GRADE - SET 2, 43+16

CORRELATION MATRIX       SELECTED VARIABLE

                     TEXP          TCOND           TLOC          TSESB          TTRNG         TCOLAT         TRELAC

PPLNT           -0.066848       0.110488       0.031149       0.098416       0.022359       0.039834      -0.025034
PEXP             0.127775      -0.096118      -0.150886      -0.129083       0.035408      -0.114324       0.081615
PTRNG           -0.202666       0.019278       0.077585       0.311812       0.421379       0.217742      -0.028688
PCOLAT          -0.097471       0.057681       0.058389       0.135633       0.056389       0.171521      -0.120784
PINSTF          -0.097978      -0.050735      -0.017497       0.093822       0.021345       0.043603       0.084558
PSPST           -0.377260      -0.077473       0.084296       0.376305       0.390888       0.241707      -0.109917
PTRCK           -0.192915      -0.066568       0.055751       0.128559       0.149875       0.081981      -0.051441
PTSTG            0.164903      -0.021778      -0.090379      -0.119543      -0.152276      -0.097995       0.122365
PTRNS           -0.175882      -0.095353       0.202300       0.140013       0.071510       0.171643      -0.054194
PREMD           -0.197461      -0.046472       0.014793       0.169384       0.125684       0.094662      -0.092014
PFLUN            0.012508      -0.209930       0.081930      -0.104159      -0.112549      -0.030984       0.031500
PACRD           -0.078464       0.045434       0.032266       0.033971      -0.045957       0.055701      -0.032976
PAGTXT          -0.007746       0.038255       0.093596       0.017326       0.062511       0.032757      -0.092376
PAVTXT          -0.060654       0.099328       0.073884       0.145279      -0.005698       0.046128      -0.049275
PRURUB          -0.305697      -0.063604       0.016826       0.278029       0.257393       0.231665      -0.129851
PPTRAT           0.044836      -0.039284      -0.136254      -0.123583      -0.086564      -0.041231       0.079744
PENRL           -0.246185      -0.072307      -0.102843       0.158681       0.177954       0.150149      -0.028397
PAGBLD           0.174762      -0.070196      -0.146625       0.070450      -0.027300      -0.014137      -0.147997
PPUPRM          -0.084447      -0.096249      -0.095424      -0.014665      -0.014837       0.074105       0.083430
PSEX            -0.006044      -0.015862      -0.062078      -0.094586      -0.048623      -0.011230      -0.059081
PSREP           -0.123126       0.348963      -0.003218       0.245007       0.156061       0.152754      -0.010499
TEXP             1.000000      -0.017659      -0.278425      -0.391384       0.182222      -0.247722       0.134373
TCOND           -0.017659       1.000000       0.003436       0.100688      -0.012459       0.151453      -0.084614
TLOC            -0.278425       0.003436       1.000000       0.166328       0.072219       0.140576       0.020304
TSESB           -0.391384       0.100688       0.166328       1.000000       0.152293       0.303743      -0.104829
TTRNG            0.182222      -0.012459       0.072219       0.152293       1.000000       0.175232       0.071944
TCOLAT          -0.247722       0.151453       0.140576       0.303743       0.175232       1.000000      -0.114928
TRELAC           0.134373      -0.084614       0.020304      -0.104829       0.071944      -0.114928       1.000000
TPRHAB          -0.235534       0.236506       0.047389       0.354059       0.070903       0.252228      -0.254651
TSEX             0.383137       0.065059      -0.150753      -0.149746      -0.279030      -0.150681       0.033911
TRACE           -0.068759       0.330723       0.102467       0.284673       0.071760       0.354516      -0.378036
TSAL            -0.006270      -0.064632       0.197443       0.252163       0.776669       0.271566      -0.017082
TVOCAB          -0.116903       0.186530       0.196159       0.400520       0.160191       0.335547      -0.292576
SEXPTN           0.046906       0.295489      -0.046489      -0.009185      -0.004845       0.001541      -0.044695
SSES            -0.273035       0.476064       0.123884       0.399354       0.217294       0.319327      -0.245254
SSOCON           0.004986       0.248530       0.042871       0.095567       0.034839       0.116370      -0.081850
SATTUD          -0.042901       0.350907       0.063366       0.158936       0.045134       0.164454      -0.147668
SFSS            -0.073519       0.394275       0.022724       0.134779       0.032765       0.186774      -0.191219
SEDPLN          -0.203525       0.403708       0.132493       0.200082       0.116223       0.182610      -0.095625
SHBTS           -0.007982       0.301304       0.008535       0.095035       0.039314       0.086617      -0.073223
SACHV           -0.221519       0.467545       0.162781       0.325006       0.093593       0.314273      -0.297739
SSEX            -0.067749       0.099999       0.014974       0.106742       0.063895       0.127726      -0.023775
SRETHC          -0.078288       0.463550       0.074709       0.236070       0.025524       0.283696      -0.354967
PFNURS          -0.073575      -0.277921       0.300847       0.154294       0.215102       0.049962       0.208393
PCOMPL          -0.121653       0.089322       0.109422       0.162429       0.193319       0.233171      -0.115420
PLNDAY           0.083450       0.142835      -0.057990      -0.070604       0.011361       0.015588       0.095052
PLGRD           -0.009987      -0.008303      -0.068153       0.003941       0.001627       0.039675       0.048773
PPTST            0.021073       0.034580       0.017728      -0.063402      -0.067572      -0.116253       0.065726
PASGN           -0.109402       0.102918       0.085567       0.129788       0.175737       0.221999      -0.104509
PDATTN           0.067325       0.348376       0.076826       0.089350       0.066578       0.097197      -0.101651
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE
                                                                       9TH GRADE - SET 2, 43+16
CORRELATION MATRIX       SELECTED VARIABLE

                      TEXP             TCOND            TLOC             TSESB            TTRNG            TCOLAT           TRELAC

PPRSLR              0.009314         0.108255         0.124911         0.063196         0.109412         0.122186        -0.046429
PCRED              -0.076584        -0.038403        -0.023252         0.103976         0.276646         0.128168         0.032582
TCRED               0.050583        -0.173347         0.066811         0.080107         0.409474         0.112614         0.053620
TASGN               0.091167         0.098127         0.061106        -0.125481        -0.111941         0.030788        -0.072159
TINST               0.020441        -0.003307         0.053039         0.030504         0.240396        -0.060193         0.098394
THONOR             -0.035271         0.106542         0.073671         0.078782         0.112142         0.091610         0.111161
SAGE               -0.121108         0.414591         0.037830         0.174113         0.084796         0.200755        -0.201278
SFORPT              0.049932         0.198888        -0.023028         0.013594        -0.076720        -0.113275        -0.027999
SFORST             -0.075888         0.219386         0.036027         0.119101         0.108151         0.082717        -0.071521
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                         9TH GRADE - SET 2, 43+16

CORRELATION MATRIX      SELECTED VARIABLE

                       TPRHAB          TSEX           TRACE           TSAL          TVOCAB          SEXPTN          SSES

PPLNT                0.145136      -0.079564       0.113446       0.077210       0.100482       0.119959       0.232624
PEXP                -0.083808       0.104412      -0.297440      -0.021647      -0.139801       0.059942      -0.107541
PTRNG                0.211789      -0.281716       0.114910       0.577274       0.192310      -0.081007       0.307193
PCOLAT               0.077141      -0.119922       0.153003       0.115844       0.064527       0.032803       0.127395
PINSTF               0.035006      -0.140588       0.090685       0.124803       0.084348      -0.004414       0.099936
PSPST                0.175652      -0.440376       0.144487       0.597804       0.255204      -0.054618       0.451997
PTRCK                0.030490      -0.178477      -0.024389       0.214640       0.061807      -0.104770       0.111516
PTSTG               -0.143241       0.181645      -0.131653      -0.176525      -0.086750      -0.062615      -0.236552
PTRNS                0.048974      -0.097065       0.124114       0.170799       0.123803      -0.040554       0.072262
PREMD                0.125119      -0.195862      -0.005797       0.168308      -0.011187      -0.111351       0.038967
PFLUN               -0.118256       0.106590      -0.020978      -0.058563      -0.030023      -0.167338      -0.314429
PACRD                0.046633      -0.073136       0.108038      -0.020340       0.068567       0.032772       0.136245
PAGTXT              -0.011156      -0.093230       0.123249       0.070782       0.106575      -0.012029       0.088179
PAVTXT               0.175721       0.061240       0.156972       0.000330       0.190281       0.125663       0.181956
PRURUB               0.156515      -0.338407      -0.004279       0.353263       0.088319      -0.021857       0.350539
PPTRAT              -0.091780       0.105898      -0.225627      -0.244032      -0.284769      -0.025576      -0.229074
PENRL                0.090592      -0.308974      -0.030756       0.305244      -0.002407      -0.097687       0.191651
PAGBLD              -0.015490       0.061665       0.164225      -0.006375       0.176482      -0.008500       0.058757
PPUPRM              -0.039776      -0.099029      -0.203625      -0.010068      -0.174921      -0.110835      -0.120774
PSEX                -0.062218       0.066034      -0.020957      -0.047652       0.002028       0.041974      -0.024687
PSREP                0.187605      -0.109669       0.189240       0.124607       0.203519       0.100680       0.348980
TEXP                -0.235534       0.383137      -0.068759      -0.006270      -0.116903       0.046906      -0.273035
TCOND                0.236506       0.065059       0.330723      -0.064632       0.186530       0.295489       0.476064
TLOC                 0.047389      -0.150753       0.102467       0.197443       0.196159      -0.046489       0.123884
TSESB                0.354059      -0.149746       0.284673       0.252163       0.400520      -0.009185       0.399354
TTRNG                0.070903      -0.279030       0.071760       0.776669       0.160191      -0.004845       0.217294
TCOLAT               0.252228      -0.150681       0.354516       0.271566       0.335547       0.001541       0.319327
TRELAC              -0.254651       0.033931      -0.378056      -0.017062      -0.292576      -0.044693      -0.245254
TPRHAB               1.000000       0.016593       0.317867       0.108772       0.317214       0.109223       0.346984
TSEX                 0.016593       1.000000      -0.148641      -0.368976      -0.051860       0.045454      -0.288267
TRACE                0.317867      -0.148641       1.000000       0.177648       0.588824       0.120323       0.568656
TSAL                 0.108772      -0.368976       0.177648       1.000000       0.299233      -0.099734       0.310470
TVOCAB               0.317214      -0.051860       0.588824       0.299233       1.000000       0.089077       0.475670
SEXPTN               0.109223       0.045454       0.120323      -0.099734       0.089077       1.000000       0.470810
SSES                 0.346984      -0.288267       0.568656       0.310470       0.475670       0.470810       1.000000
SSOCON               0.146281      -0.014244       0.342180       0.030834       0.245805       0.726147       0.464923
SATTUD               0.223598      -0.040525       0.466510       0.063027       0.340375       0.719431       0.602674
SFSS                 0.212936      -0.115608       0.547202       0.050825       0.349493       0.660189       0.670847
SEDPLN               0.221542      -0.098692       0.209613       0.147935       0.231517       0.685742       0.685580
SHBTS                0.155713      -0.030656       0.293405       0.022924       0.235017       0.815654       0.556680
SACHV                0.324016      -0.219168       0.766351       0.239571       0.579233       0.305673       0.816361
SSEX                 0.102830      -0.103916       0.198792       0.088823       0.155532       0.526877       0.398401
SRETHC               0.329795      -0.145503       0.886750       0.063753       0.538879       0.285191       0.680954
PFNURS              -0.025457       0.041844       0.105824       0.305656       0.139643      -0.368646      -0.209994
PCOMPL               0.184397      -0.164812       0.335441       0.320106       0.325069       0.016903       0.343864
PLNDAY              -0.010675       0.128504      -0.039054      -0.047615      -0.124212       0.074481       0.016978
PLGRD               -0.017785      -0.069454       0.107581       0.026808      -0.035894      -0.083357       0.017985
PPTST               -0.016990      -0.001255      -0.135854      -0.123056      -0.095614       0.027020      -0.033034
PASGN                0.156952      -0.134024       0.178364       0.287191       0.191183      -0.005984       0.282548
PDATTN               0.217197       0.017689       0.434134       0.017533       0.267902       0.261764       0.382155
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                  9TH GRADE - SET 2, 43+16

CORRELATION MATRIX      SELECTED VARIABLE

                    TPRHAB         TSEX          TRACE          TSAL         TVOCAB         SEXPTN          SSES

PPRSLR            0.049435     -0.003514      0.125871      0.142567      0.154436      0.108744      0.192648
PCRED             0.075340     -0.085059      0.021258      0.317225      0.018088     -0.057785      0.108316
TCRED            -0.045801     -0.284095     -0.004402      0.543237      0.132268     -0.148736      0.088505
TASGN             0.050022      0.007373      0.314581     -0.150513      0.046360      0.056136      0.012760
TINST            -0.028597     -0.086142     -0.113684      0.144173      0.022332      0.013871      0.018462
THONOR            0.262086     -0.026811      0.140057      0.029271      0.217178     -0.003020      0.113870
SAGE              0.234950     -0.207774      0.440595      0.153622      0.346123      0.457083      0.663860
SFORPT            0.070127      0.026523      0.089226     -0.161805      0.042977      0.661067      0.375402
SFORST            0.143868     -0.115179      0.253516      0.126160      0.211191      0.667439      0.578245
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE

9TH GRADE - SET 2, 43+16

CORRELATION MATRIX SELECTED VARIABLE

	SSOCON	SATTUD	SFSS	SEDPLN	SHBTS	SACHV	SSEX
PPLNT	0.038429	0.062845	0.160259	0.119911	0.102526	0.167103	0.083606
PEXP	-0.021386	-0.060581	-0.143977	0.020550	0.028218	-0.215968	-0.003025
PTRNG	-0.029814	0.013267	0.024439	0.178562	0.015000	0.211245	0.132410
PCOLAT	0.025498	0.038331	0.115012	0.035358	0.023792	0.123957	0.014021
PINSTF	0.011148	0.012449	0.079466	-0.029400	0.060837	0.108899	0.107926
PSPST	-0.013296	0.042692	0.056172	0.249799	0.042482	0.305760	0.105408
PTRCK	-0.109772	-0.110554	-0.046390	0.039222	-0.079925	0.023948	0.029455
PTSTG	-0.064421	-0.101365	-0.088696	-0.146464	-0.050904	-0.160500	0.000623
PTRNS	-0.014348	0.004203	-0.038989	0.063855	-0.035151	0.088394	0.016178
PREMD	-0.094081	-0.108860	-0.096049	-0.004927	-0.091042	-0.046542	0.057574
PFLUN	-0.062622	-0.137704	-0.175179	-0.176590	-0.113455	-0.158914	-0.021696
PACRD	0.014754	0.051025	0.112398	0.060442	0.061826	0.178117	0.022033
PAGTXT	0.009342	0.075684	0.037846	0.008046	0.040819	0.151379	0.107046
PAVTXT	0.170570	0.210972	0.145397	0.142176	0.174587	0.205733	0.005319
PRURUB	-0.074174	-0.023591	-0.052548	0.255308	-0.010665	0.135090	0.052199
PPTRAT	-0.206942	-0.259114	-0.246515	-0.160338	-0.192356	-0.339659	-0.004892
PENRL	-0.159406	-0.129224	-0.079099	0.103976	-0.061630	0.040481	0.039347
PAGBLD	0.084124	0.114630	0.085984	-0.046926	0.069352	0.152557	0.080871
PPUPRM	-0.225198	-0.260689	-0.202807	-0.137337	-0.182974	-0.233061	0.007876
PSEX	0.013594	0.028807	-0.037683	0.025886	0.016062	0.009874	0.031265
PSREP	0.104948	0.145692	0.186856	0.246334	0.135532	0.265161	0.091872
TEXP	0.004986	-0.042901	-0.073519	-0.203525	-0.007982	-0.221519	-0.067749
TCOND	0.248530	0.350907	0.394275	0.403708	0.301304	0.467545	0.099999
TLOC	0.042871	0.063366	0.022724	0.132493	0.008535	0.162781	0.014974
TSESB	0.095567	0.158936	0.134779	0.200082	0.096035	0.325006	0.106742
TTRNG	0.034839	0.045134	0.032765	0.116223	0.039314	0.093593	0.063895
TCOLAT	0.116370	0.164454	0.186774	0.182610	0.086517	0.314273	0.127726
TRELAC	-0.081850	-0.147668	-0.191219	-0.095625	-0.073223	-0.297739	-0.033773
TPRHAB	0.146281	0.223598	0.212936	0.221542	0.155713	0.324016	0.102850
TSEX	-0.014244	-0.040525	-0.115608	-0.098692	-0.030656	-0.219168	-0.103916
TRACE	0.342180	0.466510	0.547202	0.209613	0.293405	0.766551	0.198792
TSAL	0.030834	0.063027	0.050825	0.147935	0.022924	0.239571	0.088823
TVOCAB	0.245805	0.340375	0.349493	0.231517	0.235017	0.579233	0.155532
SEXPTN	0.726147	0.719431	0.660189	0.685742	0.815654	0.305673	0.526877
SSES	0.464923	0.602674	0.670847	0.685686	0.566580	0.816561	0.398401
SSOCON	1.000000	0.954910	0.705216	0.560456	0.805690	0.461290	0.489442
SATTUD	0.954910	1.000000	0.751362	0.625332	0.791577	0.637491	0.473875
SFSS	0.705216	0.751362	1.000000	0.556779	0.823495	0.662227	0.627405
SEDPLN	0.560456	0.625332	0.556779	1.000000	0.684363	0.504443	0.406559
SHBTS	0.805690	0.791577	0.823495	0.684363	1.000000	0.458476	0.646617
SACHV	0.461290	0.637491	0.662227	0.504443	0.458476	1.000000	0.280403
SSEX	0.489442	0.473875	0.627405	0.406559	0.646617	0.280403	1.000000
SRETHC	0.452322	0.597774	0.702323	0.285398	0.425476	0.842881	0.268229
PFNURS	-0.082918	-0.125244	-0.076584	-0.139478	-0.112581	-0.063693	0.049717
PCOMPL	0.175575	0.251524	0.246481	0.193258	0.145174	0.402804	0.061937
PLNDAY	0.057452	0.028212	0.038181	0.014434	0.035152	-0.035542	-0.052855
PLGRD	0.029192	0.039753	0.043028	-0.057300	0.008013	0.064810	0.025014
PPTST	0.009743	-0.025498	-0.056987	0.096636	0.006830	-0.140760	-0.129549
PASGN	0.052770	0.088527	0.126276	0.178994	0.061216	0.207507	0.071341
PDATTN	0.323309	0.381217	0.423923	0.283468	0.297469	0.427432	0.070413

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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                         9TH GRADE - SET 2, 43+16

CORRELATION MATRIX      SELECTED VARIABLE

                    SSOCON          SATTUD           SFSS          SEDPLN           SHBTS           SACHV            SSEX

PPRSLR            0.102975        0.133970        0.078936        0.222637        0.088794        0.141308        0.004512
PCRED             0.038119        0.040768        0.017426        0.044959        0.014328        0.057007        0.079296
TCRED            -0.084002       -0.068704       -0.083619        0.020261       -0.081061        0.040080        0.029035
TASGN             0.154452        0.156187        0.194688        0.007116        0.106225        0.147833        0.000601
TINST            -0.054546       -0.056941       -0.052409        0.035376       -0.004837       -0.074368        0.010837
THONOR           -0.010055        0.009085        0.068410        0.084168        0.013751        0.138007        0.057663
SAGE              0.406837        0.509313        0.602907        0.532531        0.491623        0.594255        0.447706
SFORPT            0.534570        0.526942        0.639279        0.407644        0.673238        0.229345        0.625736
SFORST            0.591296        0.596406        0.728589        0.563142        0.756021        0.427157        0.700840
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                     9TH GRADE - SET 2, 43+16

CORRELATION MATRIX      SELECTED VARIABLE

                    SRETHC        PFNURS        PCOMPL        PLNDAY         PLGRD         PPTST         PASGN

PPLNT             0.152987     -0.037395      0.064131      0.142666      0.099984      0.035279      0.066012
PEXP             -0.257225     -0.043887     -0.117986     -0.049959      0.017754      0.053849     -0.020711
PTRNG             0.058693      0.145132      0.212975     -0.183543      0.022925     -0.066487      0.235761
PCOLAT            0.139914     -0.154026      0.059900      0.009482      0.027795     -0.105037      0.063832
PINSTF            0.073253     -0.012038     -0.012227      0.072898      0.388664     -0.015587     -0.142525
PSPST             0.084795      0.070128      0.300554     -0.110611      0.100120     -0.086348      0.271289
PTRCK            -0.056382      0.055612      0.046842     -0.120065      0.019367      0.024903      0.011410
PTSTG            -0.136874      0.120455     -0.097928      0.164203      0.030557      0.026100     -0.172274
PTRNS             0.034251      0.056100      0.068277     -0.072835      0.009613     -0.076289      0.019073
PREMD            -0.082826      0.023830      0.025968     -0.106491     -0.011738      0.091565     -0.006081
PFLUN            -0.179044      0.209591     -0.062437     -0.016097     -0.003335     -0.035797     -0.151095
PACRD             0.122112     -0.034776      0.031379      0.018247      0.090226     -0.012201      0.045415
PAGTXT            0.119553     -0.041145      0.083178     -0.010276      0.091703      0.027207      0.185726
PAVTXT            0.170055     -0.037708      0.087077     -0.017068      0.179069      0.042681      0.094197
PRURUB           -0.054777     -0.111422      0.159692     -0.093106     -0.023282     -0.020492      0.338222
PPTRAT           -0.212207     -0.060893     -0.247956      0.031573     -0.097716     -0.042256     -0.029640
PENRL            -0.060911     -0.070374      0.079783     -0.131786      0.116005     -0.067408      0.180354
PAGBLD            0.140990     -0.153054      0.205143     -0.075586     -0.038571     -0.018431      0.064141
PPUPRM           -0.200264     -0.087042     -0.091523     -0.030864     -0.059070     -0.053942      0.040701
PSEX             -0.028553     -0.026422      0.028536     -0.071721     -0.088320     -0.030324     -0.032990
PSREP             0.226745      0.052509      0.138940      0.132558      0.084293      0.016425      0.184962
TEXP             -0.078288     -0.073575     -0.121653      0.083450     -0.009987      0.021073     -0.109402
TCOND             0.463550     -0.277921      0.089322      0.142835     -0.008303      0.034580      0.102918
TLOC              0.074709      0.300847      0.109422     -0.057990     -0.068153      0.017728      0.085567
TSESB             0.236070      0.154294      0.162429     -0.070604      0.003941     -0.063402      0.129788
TTRNG             0.023524      0.215102      0.193319      0.011361      0.001627     -0.067572      0.175737
TCOLAT            0.283696      0.049962      0.233171      0.015588      0.039675     -0.116253      0.221999
TRELAC           -0.354967      0.208390     -0.115420      0.095052      0.048773      0.065726     -0.104309
TPRHAB            0.329795     -0.025457      0.184397     -0.010675     -0.017785     -0.016990      0.156952
TSEX             -0.145503      0.041844     -0.164812      0.128504     -0.069454     -0.001255     -0.134024
TRACE             0.886750      0.105824      0.335441     -0.039054      0.107581     -0.135854      0.178364
TSAL              0.063753      0.305656      0.320106     -0.047615      0.026808     -0.123056      0.287191
TVOCAB            0.538879      0.139643      0.325069     -0.124212     -0.035894     -0.095614      0.191183
SEXPTN            0.285191     -0.368646      0.016903      0.074481     -0.083357      0.027020     -0.005984
SSES              0.680964     -0.209994      0.343864      0.016978      0.017985     -0.033034      0.282548
SSOCON            0.452322     -0.082918      0.175575      0.057452      0.029192      0.009743      0.052770
SATTUD            0.597774     -0.125244      0.251524      0.028212      0.039753     -0.025498      0.088527
SFSS              0.702323     -0.076584      0.246481      0.038181      0.043028     -0.056987      0.126276
SEDPLN            0.285398     -0.139478      0.193258      0.014434     -0.057300      0.096636      0.178994
SHBTS             0.425476     -0.112581      0.145174      0.035152      0.008013      0.006830      0.061215
SACHV             0.842881     -0.063693      0.402804     -0.035542      0.064810     -0.140760      0.207507
SSEX              0.268289      0.049717      0.061937     -0.052855      0.025014     -0.129549      0.071343
SRETHC            1.000000     -0.068753      0.300747     -0.014411      0.076718     -0.106406      0.145973
PFNURS           -0.068753      1.000000      0.072612     -0.059190      0.041204     -0.112359      0.089685
PCOMPL            0.300747      0.072612      1.000000     -0.001026     -0.011939     -0.078289      0.309433
PLNDAY           -0.014411     -0.059190     -0.001026      1.000000      0.074958      0.080770      0.027821
PLGRD             0.076718      0.041204     -0.011939      0.074958      1.000000     -0.096309     -0.042658
PPTST            -0.106406     -0.112359     -0.078289      0.080770     -0.096309      1.000000      0.042786
PASGN             0.145973      0.089685      0.309433      0.027821     -0.042658      0.042786      1.000000
PDATTN            0.462381      0.046613      0.291740      0.151422     -0.029101      0.042619      0.122765
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                      9TH GRADE - SET 2, 43+16

CORRELATION MATRIX      SELECTED VARIABLE

                        SRETHC         PFNURS         PCOMPL         PLNDAY         PLGRD          PPTST          PASGN

PPRSLR                0.094381       0.006038       0.095396      -0.023156      -0.164073       0.119029       0.052423
PCRED                 0.002036      -0.024523       0.067512      -0.006846      -0.035257      -0.006105       0.100386
TCRED                -0.066288       0.097863       0.118288      -0.167247       0.056860      -0.095272       0.095385
TASGN                 0.271170       0.033643       0.007175       0.018242       0.067191       0.020977      -0.093690
TINST                -0.108493      -0.002200       0.022439      -0.038864      -0.012279      -0.067802      -0.015514
THONOR                0.153042       0.031544       0.057912      -0.028853      -0.046561       0.046273       0.064508
SAGE                  0.540165      -0.301516       0.281244      -0.036447      -0.050482      -0.017922       0.183427
SFORPT                0.289314      -0.094037      -0.081907       0.092425      -0.018959       0.055460      -0.075158
SFORST                0.386899      -0.082546       0.175838      -0.008740      -0.006400       0.006880       0.092837
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                                9TH GRADE - SET 2, 43+16

CORRELATION MATRIX       SELECTED VARIABLE

                      PDATTN         PPRSLR         PCRED          TCRED          TASGN          TINST          THONUR

PPLNT               0.125849       0.088927       0.043772       0.135109      -0.022607       0.018025       0.005664
PEXP               -0.095687      -0.052231       0.145021       0.003607      -0.183024       0.047937      -0.062917
PTRNG              -0.045570       0.096944       0.195153       0.401084      -0.258022       0.117877       0.057704
PCOLAT             -0.021241      -0.028605       0.049360       0.049190       0.032919       0.023665      -0.091993
PINSTF             -0.040121      -0.108952       0.129359       0.127756       0.054180      -0.030712       0.043007
PSPST              -0.053895       0.068590       0.254328       0.431132      -0.233312       0.058151       0.026550
PTRCK              -0.073821      -0.015814       0.140114       0.223952      -0.163046       0.103613       0.027063
PTSTG              -0.078897      -0.104106       0.014997      -0.118146       0.088430      -0.046551       0.010295
PTRNS              -0.091091       0.054311       0.007551       0.094891      -0.038054      -0.037655       0.074015
PREMD              -0.080987      -0.004803       0.097604       0.172865      -0.123427       0.074127       0.053102
PFLUN              -0.127832      -0.005223      -0.079666      -0.013215       0.134597       0.001534      -0.022392
PACRD               0.072070      -0.123988       0.038542      -0.030323      -0.027063       0.001172       0.153991
PAGTXT             -0.038405      -0.020794       0.032505       0.084928      -0.002888       0.045327      -0.012799
PAVTXT              0.135577       0.077152       0.106607      -0.025362       0.057385      -0.022009       0.080635
PRURUB             -0.101608       0.055863       0.152593       0.297675      -0.255092       0.085244      -0.039311
PPTRAT             -0.173745      -0.049659      -0.028673      -0.124955      -0.117115       0.079512       0.009185
PENRL              -0.193004      -0.075571       0.191588       0.316761      -0.250147       0.067705       0.047449
PAGBLD              0.047242      -0.052288      -0.084187       0.029899      -0.002202      -0.007742      -0.084801
PPUPRM             -0.253524      -0.054836       0.080420       0.056487      -0.173734       0.058065       0.075168
PSEX               -0.098839      -0.007061       0.001533      -0.048716       0.000194      -0.005245      -0.082104
PSREP               0.271133       0.030987       0.150204       0.020676      -0.080546       0.077153       0.132706
TEXP                0.067325       0.009314      -0.076584       0.050583       0.091167       0.020441      -0.035271
TCOND               0.348376       0.108255      -0.038403      -0.173347       0.098127      -0.003307       0.106542
TLOC                0.076826       0.124911      -0.023252       0.066811       0.061105       0.053039       0.073671
TSESB               0.089350       0.063196       0.103976       0.080107      -0.125481       0.030504       0.078762
TTRNG               0.066578       0.109412       0.276646       0.409474      -0.111941       0.240396       0.112142
TCOLAT              0.097197       0.122186       0.128168       0.112614       0.030788      -0.060193       0.091610
TRELAC             -0.101631      -0.046429       0.032582       0.053620      -0.072159       0.098394       0.111161
TPRHAB              0.217197       0.049435       0.075340      -0.045801       0.050022      -0.028597       0.262086
TSEX                0.017689      -0.003514      -0.085059      -0.284095       0.007373      -0.086142      -0.026811
TRACE               0.434134       0.125871       0.021258      -0.004402       0.314581      -0.113684       0.140057
TSAL                0.017533       0.142567       0.317225       0.543237      -0.150513       0.144173       0.029271
TVOCAB              0.267902       0.154436       0.016088       0.132268       0.046360       0.022332       0.217178
SEXPTN              0.261764       0.108744      -0.057785      -0.148736       0.056136       0.013871      -0.003020
SSES                0.382153       0.192648       0.108316       0.088505       0.012760       0.018462       0.113870
SSOCON              0.323309       0.102975       0.038119      -0.084002       0.154452      -0.054546      -0.010059
SATTUD              0.381217       0.133970       0.040768      -0.068704       0.156187      -0.056941       0.039085
SFSS                0.423923       0.078936       0.017426      -0.083619       0.194688      -0.052409       0.068410
SEDPLN              0.283468       0.222637       0.044959       0.020261       0.007116       0.035376       0.094168
SHBTS               0.297469       0.088794       0.014328      -0.081061       0.106225      -0.004837       0.013751
SACHV               0.427432       0.141308       0.057007       0.040080       0.147833      -0.074368       0.138007
SSEX                0.070413       0.004512       0.079296       0.029035       0.000601       0.010637       0.057663
SRETHC              0.462381       0.094381       0.002036      -0.066288       0.271170      -0.108493       0.153042
PFNURS              0.046613       0.006038      -0.024523       0.097863       0.033643      -0.002200       0.031544
PCOMPL              0.291740       0.095396       0.067512       0.118288       0.007175       0.022439       0.057912
PLNDAY              0.151422      -0.023156      -0.006846      -0.167247       0.018242      -0.038864      -0.028853
PLGRD              -0.029101      -0.164073      -0.035257       0.056860       0.067191      -0.012279      -0.045561
PPTST               0.042619       0.119029      -0.006105      -0.095272       0.020977      -0.067802       0.046273
PASGN               0.122765       0.052423       0.100386       0.095385      -0.093690      -0.015514       0.064516
PDATTN              1.000000       0.155320      -0.069794      -0.155586       0.142312      -0.079055       0.040386
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                     9TH GRADE - SET 2, 43+16

CORRELATION MATRIX      SELECTED VARIABLE

                     PDATTN         PPRSLR          PCRED          TCRED          TASGN          TINST         THONOR

PPRSLR             0.155320       1.000000      -0.018443       0.120646      -0.023869      -0.017581       0.002387
PCRED             -0.069794      -0.018443       1.000000       0.260464      -0.058986      -0.032200       0.089639
TCRED             -0.155586       0.120646       0.260464       1.000000      -0.134495       0.212969       0.030226
TASGN              0.142312      -0.023869      -0.058986      -0.134495       1.000000      -0.095053      -0.054779
TINST             -0.079055      -0.017581      -0.032200       0.212969      -0.095053       1.000000       0.043903
THONOR             0.040366       0.002387       0.089639       0.030226      -0.054779       0.043903       1.000000
SAGE               0.346559       0.185465       0.069436       0.052226       0.044046      -0.007069       0.078791
SFORPT             0.192871       0.011611      -0.076377      -0.196007       0.074426      -0.023876       0.043263
SFORST             0.254112       0.081096       0.083346       0.007456       0.050209       0.002605       0.050580
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                                9TH GRADE - SET 2, 43+16

CORRELATION MATRIX       SELECTED VARIABLE

                          SAGE          SFORPT          SFORST

PPLNT                 0.154926        0.042296        0.141222
PEXP                 -0.046877       -0.012146       -0.011610
PTRNG                 0.145217       -0.161053        0.105061
PCOLAT                0.041400        0.007638        0.038216
PINSTF                0.004884        0.009631        0.108784
PSPST                 0.204491       -0.180330        0.185718
PTRCK                 0.039309       -0.166957        0.002125
PTSTG                -0.192430        0.050253       -0.027729
PTRNS                -0.018347       -0.101103       -0.009558
PREMD                 0.004959       -0.133181       -0.030921
PFLUN                -0.274156       -0.198865       -0.126182
PACRD                 0.036417        0.081289        0.047206
PAGTXT                0.100801       -0.035761       -0.001538
PAVTXT                0.112748        0.081233        0.098837
PRURUB                0.187645       -0.134378        0.085522
PPTRAT               -0.196548       -0.004041       -0.181675
PENRL                 0.059356       -0.203468        0.029892
PAGBLD                0.135687       -0.011457       -0.001350
PPUPRM               -0.131870       -0.079308       -0.138820
PSEX                  0.025957       -0.020278       -0.010364
PSREP                 0.200467        0.061612        0.151627
TEXP                 -0.121108        0.049932       -0.075888
TCOND                 0.414591        0.198888        0.219386
TLOC                  0.037830       -0.023028        0.036027
TSESB                 0.174113        0.013594        0.119101
TTRNG                 0.084796       -0.076720        0.108151
TCOLAT                0.200755       -0.113275        0.082717
TRELAC               -0.201278       -0.027999       -0.071521
TPRHAB                0.234950        0.070127        0.143868
TSEX                 -0.207774        0.026523       -0.115179
TRACE                 0.440595        0.089226        0.253516
TSAL                  0.153622       -0.161805        0.126160
TVOCAB                0.346123        0.042977        0.211191
SEXPTN                0.457083        0.661067        0.667439
SSES                  0.663860        0.375402        0.578245
SSOCON                0.406837        0.534570        0.591296
SATTUD                0.509313        0.526942        0.596406
SFSS                  0.602907        0.639279        0.728589
SEDPLN                0.532551        0.407644        0.563142
SHBTS                 0.491623        0.673238        0.756021
SACHV                 0.594255        0.229345        0.427157
SSEX                  0.447706        0.625736        0.700840
SRETHC                0.540165        0.289314        0.386899
PFNURS               -0.301516       -0.094037       -0.082546
PCOMPL                0.281244       -0.081907        0.175838
PLNDAY               -0.036447        0.092425       -0.008740
PLGRD                -0.050482       -0.018959       -0.006400
PPTST                -0.017922        0.055460        0.006880
PASGN                 0.183427       -0.075158        0.092837
PDATTN                0.346559        0.192871        0.254112
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FACTOR ANALYSIS - MERGED DATA
9TH GRADE                                                               9TH GRADE - SET 2, 43+16

CORRELATION MATRIX      SELECTED VARIABLE

                          SAGE          SFORPT          SFORST

PPRSLR               0.185465        0.011611        0.081096
PCRED                0.069436       -0.076377        0.083346
TCRED                0.052226       -0.196007        0.007456
TASGN                0.044046        0.074426        0.050209
TINST               -0.007069       -0.023876        0.002605
THONOR               0.078791        0.043263        0.050580
SAGE                 1.000000        0.404641        0.542881
SFORPT               0.404641        1.000000        0.711676
SFORST               0.542881        0.711676        1.000000
```

Sixth Grade School, Student Aggregate and Teacher Aggregate Intercorrelations

The first 43 variables in the following list comprise the basic set.

NO.	ACRONYM	TITLE
1	PPLNT	Plant and Physical Facilities
2	PEXP	Principal's Experience
3	PTRNG	Principal's Training
4	PCOLAT	Principal's College Attended
5	PINSTF	Instructional Facilities
6	PSPST	Specialized Staff and Services
7	PTRCK	Tracking and Ability Grouping
8	PTSTG	Testing
9	PTRNS	Transfers
10	PREMD	Remedial Programs
11	PFLUN	Free Milk and Lunch Programs
12	PACRD	Accreditation
13	PAGTXT	Age of Texts
14	PAVTXT	Availability of Texts
15	PRURUB	Rural-Urban Location of School
16	PPTRAT	Pupil Teacher Ratio
17	PENRL	Number of Students Enrolled
18	PPRSLR	Promotion Policy
19	PAGBLD	Age of Building
20	PPUPRM	Pupils Per Rooms

NO.	ACRONYM	TITLE
21	PSEX	Principal's Sex
22	PSREP	Principal's Estimate of School's Reputation
23	TEXP	Teacher's Experience
24	TCOND	Teaching Conditions
25	TLOC	Teacher's Localism of Background
26	TSESB	Teacher's Socio-Exonomic Background
27	TTRNG	Teacher's Training
28	TCOLAT	Teacher's College Attended
29	TRELAC	Teaching Related Activities
30	TPRHAB	Teacher's Preference for Student Ability Level
31	TSEX	Teacher's Sex
32	TRACE	Teacher's Racial-Ethnic Group Membership
33	TSAL	Teacher's Annual Teaching Salary
34	TVOCAB	Teacher's Vocabulary Score
35	SSES	Student's Socio-Economic Status
36	SFSS	Student's Family Structure and Stability
37	SEXPTN	Student's Expectations for Excellence
38	SEDPLN	Student's Educational Plans and Desires
39	SHBTS	Student's Study Habits
40	SATTUD	Student's Attitude Toward Life
41	SACHV	Student's Achievement
42	SSEX	Student's Sex
43	SRACE	Student's Racial-Ethnic Group Membership
44	PSES	Principal's Estimate of Student Body's SES

NO.	ACRONYM	TITLE
45	PPTA	Principal's Estimate of PTA Attendance
46	PTURN	Teacher Turnover
47	PTENR	Teacher Tenure
48	PTEXM	Teacher Examinations
49	PWHITE	Principal's Estimate of Percent White of Student Body
50	PPROB	Principal's Estimate of School Problems
51	PNWENT	Length of Time Since Non-Whites Entered
52	PHMWK	Hours of Homework Expected
53	PHRTCH	Principal's Hours a Day Spent in Classroom Teaching
54	TWHUND	Percent White of Students at Teachers Undergraduate Institution
55	TWHITE	Percent White of Students in Teacher's Class
56	THRTCH	Teacher's Hours a Day Spent in Classroom Teaching
57	TSIZE	Teacher's Average Class Size
58	SBIRTH	Area of Student's Birth
59	SMTRBN	Area of Student's Mothers Birth

SET 2

NO.	ACRONYM	TITLE
44	PFNURS	Free Nursery
45	PCOMPL	Compulsory Attendance Law
46	PLNDAY	Length of School Day
47	PLGRD	Courses From Different Teachers
48	PPTST	Percent of Students in Part-Time Attendance
49	PASGN	Pupil Assignment
50	PDATTN	Percent Daily Attendance
51	PCRED	Principal's Credits Beyond Highest Degree
52	TCRED	Teacher's Credits Beyond Highest Degree

NO.	ACRONYM	TITLE
53	TASGN	Teacher's Assignment to Present School
54	TINST	Teacher Attends Summer Institute
55	THONOR	Teacher Member National Honorary
56	SFORPT	Student's Parents Speak a Foreign Language
57	SFORST	Student Speaks a Foreign Language Outside of School
58	SKGTN	Student's Kindergarten Attendance
59	SNURSY	Student's Nursery School Attendance

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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                              6TH GRADE - SET 1    59

SELECTED VARIABLE


THE NUMBER OF OBSERVATIONS IS       54568.

VARIABLE         SUMS         SUMS OF SQUARES          MEAN           SIGMA(N)        SIGMA(N-1)
PPLNT        -8337.7704        385793.3086           -0.1528          2.6546          2.6546
PEXP          3366.1028        261749.9434            0.0617          2.1893          2.1893
PTRNG        -4920.7780        107748.9023           -0.0902          1.4023          1.4023
PCOLAT       -1052.7261         94189.1855           -0.0193          1.3137          1.3137
PINSTF     -118428.4893        807174.8125           -2.1703          3.1752          3.1752
PSPST       -41219.8384        426308.7188           -0.7554          2.6911          2.6911
PTRCK       -11792.0870        384233.1797           -0.2161          2.6447          2.6448
PTSTG        10842.3789         87467.3564            0.1987          1.2504          1.2504
PTRNS         8632.5020        164259.3613            0.1582          1.7278          1.7278
PREMD       -11972.1355        117153.6543           -0.2194          1.4487          1.4487
PFLUN         6073.9158        149708.4766            0.1113          1.6526          1.6526
PACRD         -105.5297        127375.9424           -0.0019          1.5278          1.5278
PAGTXT        3952.2165         73304.4561            0.0724          1.1568          1.1568
PAVTXT       -3658.9814         62483.5288           -0.0671          1.0680          1.0680
PRURUB         651.2922         57818.3716            0.0119          1.0293          1.0293
PPTRAT       11530.7867         51189.3770            0.2113          0.9452          0.9452
PENRL       -10203.1716         29878.7991           -0.1870          0.7160          0.7160
PPRSLR       -2037.7437         54014.7563           -0.0373          0.9942          0.9942
PAGBLD        -496.5828         54725.0034           -0.0091          1.0014          1.0014
PPUPRM        2867.0634         75712.2275            0.0525          1.1767          1.1768
PSEX          3893.2075         60261.5220            0.0713          1.0485          1.0485
PSREP        -2440.8807         56636.6924           -0.0447          1.0178          1.0178
TEXP         44466.6636        173778.8496            0.8149          1.5876          1.5877
TCOND        17093.2493        222669.8906            0.3132          1.9956          1.9956
TLOC        -18716.6274        103048.0137           -0.3430          1.3307          1.3307
TSESB       -28133.6167         74988.1143           -0.5156          1.0528          1.0528
TTRNG       -47455.2866        113252.0059           -0.8697          1.1485          1.1485
TCOLAT      -52997.1641        112776.6963           -0.9712          1.0599          1.0599
TRELAC       -7377.4194         22069.4604           -0.1352          0.6214          0.6214
TPRHAB      -26025.0537         31002.6357           -0.4769          0.5837          0.5837
TSEX         45275.3564         42967.6348            0.8297          0.3146          0.3146
TRACE         7605.3495         68111.0039            0.1394          1.1085          1.1085
TSAL        -23928.6218         36602.9165           -0.4385          0.6917          0.6917
TVOCAB      -13833.9413         33297.4932           -0.2535          0.7389          0.7389
SSES        -17052.4346         72958.3408           -0.3125          1.1133          1.1133
SFSS        -14685.9211         49592.0986           -0.2691          0.9145          0.9145
SEXPTN      -19397.0928         44437.2476           -0.3555          0.8295          0.8295
SEDPLN      -18680.1743         27366.1565           -0.3423          0.6199          0.6199
SHBTS       -31920.4814         82403.3164           -0.5850          1.0807          1.0807
SATTUD      -23805.0996         67612.5762           -0.4362          1.0241          1.0241
SACHV        -6045.7806        186109.3555           -0.1108          1.8435          1.8435
SSEX         -4145.3517          8435.7318           -0.0760          0.3858          0.3858
SRACE        -1768.0893         31822.1372           -0.0324          0.7630          0.7630
PSES         -1825.9763         55491.2363           -0.0335          1.0079          1.0079
PPTA          8139.5608         61738.3486            0.1492          1.0532          1.0532
PTURN         -891.2234         53908.8823           -0.0163          0.9938          0.9938
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                 6TH GRADE - SET 1   59

SELECTED VARIABLE


THE NUMBER OF OBSERVATIONS IS      54568.

VARIABLE        SUMS        SUMS OF SQUARES           MEAN           SIGMA(N)        SIGMA(N-1)
PTENR           107.7902       54280.3892           0.0020           0.9974           0.9974
PTEXM           121.9511       54201.1279           0.0022           0.9966           0.9966
PWHITE        -2228.0619       57360.7749          -0.0408           1.0245           1.0245
PPROB         -5028.4732       51631.5059          -0.0922           0.9683           0.9684
PNWENT        -1826.3896       48212.8281          -0.0335           0.9394           0.9394
PHMWK        -13937.3132       45741.6274          -0.2554           0.8792           0.8792
PHRTCH         2608.9659       55824.4619           0.0478           1.0103           1.0103
TWHUND        -4908.1733       54232.8999          -0.0899           0.9929           0.9929
TWHITE         -943.0543       51144.4302          -0.0173           0.9680           0.9680
THRTCH       -72983.1650       99158.6621          -1.3375           0.1683           0.1683
TSIZE          -400.4472       17197.2126          -0.0073           0.5613           0.5613
SBIRTH        -3946.1368        8655.8451          -0.0723           0.3917           0.3917
SMTRBN        -4070.1502        8009.8315          -0.0746           0.3758           0.3758
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                  6TH GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE

                    PPLNT        PEXP         PTRNG        PCOLAT       PINSTF       PSPST        PTRCK

PPLNT            1.000000     0.025950     0.242670     0.039175     0.351753     0.267355     0.053773
PEXP             0.025950     1.000000     0.010970    -0.059354     0.012907    -0.023765     0.054603
PTRNG            0.242670     0.010970     1.000000     0.095224     0.182444     0.541427     0.100231
PCOLAT           0.039175    -0.059354     0.095224     1.000000     0.050977     0.049639     0.003478
PINSTF           0.351753     0.012907     0.182444     0.050977     1.000000     0.211745     0.034524
PSPST            0.267355    -0.023765     0.541427     0.049639     0.211745     1.000000     0.127564
PTRCK            0.053773     0.054603     0.100231     0.003478     0.034524     0.127564     1.000000
PTSTG            0.139181     0.063067     0.015809     0.032660     0.319947     0.109124     0.060904
PTRNS            0.016908    -0.018480     0.273881     0.103198    -0.012501     0.193551     0.025339
PREMD            0.060429    -0.024853     0.175259     0.048349     0.114190     0.188112     0.196443
PFLUN            0.038634     0.038844    -0.195016     0.000793     0.091206    -0.163602     0.030505
PACRD            0.005614    -0.085387     0.129008     0.058345     0.066182     0.211138     0.020298
PAGTXT          -0.085421     0.108536    -0.084411    -0.018819    -0.015106    -0.063915    -0.024702
PAVTXT          -0.028216    -0.027647    -0.076143     0.016227    -0.033023     0.000945    -0.065359
PRURUB          -0.038577     0.009055     0.462708     0.031862    -0.050556     0.374939     0.062768
PPTRAT          -0.032740     0.065099     0.111293    -0.017517    -0.168030     0.025197     0.019236
PENRL            0.300327     0.093475     0.476259     0.038158     0.269657     0.508726     0.138013
PPRSLR           0.024039     0.058019     0.080878     0.018237    -0.027310     0.014926    -0.001198
PAGBLD          -0.329114     0.022570    -0.073936    -0.056222    -0.003507    -0.077513    -0.093716
PPUPRM          -0.004939     0.060285     0.104213    -0.011492    -0.020928     0.117177     0.040027
PSEX            -0.244381     0.175138    -0.195492    -0.062145    -0.171105    -0.107365    -0.017909
PSREP            0.195316     0.124241     0.122639     0.021677     0.012335     0.162953     0.115894
TEXP            -0.027914     0.214931    -0.216030    -0.093831     0.031140    -0.267572    -0.049687
TCOND            0.168589     0.001617     0.053366    -0.029073    -0.029292     0.053000    -0.027563
TLOC             0.113629    -0.129759     0.189077     0.185207     0.073426     0.149737     0.032123
TSESB            0.116889    -0.064578     0.357608     0.120301    -0.039614     0.345837     0.018147
TTRNG            0.109630     0.089030     0.575541     0.052174     0.062918     0.481012     0.031845
TCOLAT           0.080974    -0.094035     0.289862     0.253190     0.050544     0.231144    -0.021033
TRELAC           0.029190     0.028711    -0.019245    -0.048359    -0.008585    -0.057126     0.030423
TPRHAB           0.153253    -0.045991     0.202511     0.036361     0.034578     0.154871    -0.004609
TSEX             0.010876     0.078523    -0.168556     0.026538    -0.059747    -0.195044    -0.054881
TRACE            0.066557    -0.158340     0.065392     0.070968    -0.020400     0.098288    -0.103653
TSAL             0.084075    -0.010154     0.623762     0.097980     0.050416     0.556092     0.034239
TVOCAB           0.090283    -0.106902     0.225612     0.070792    -0.014469     0.249258    -0.047303
SSES             0.160486    -0.085404     0.264112     0.041670    -0.009460     0.304070    -0.022187
SFSS             0.098174    -0.094409    -0.005457     0.015192     0.007222     0.053656    -0.067841
SEXPTN           0.066006    -0.009356    -0.025647     0.014047     0.012613     0.009319    -0.036936
SEDPLN           0.096351    -0.040555     0.166743     0.006529    -0.000264     0.203801    -0.003833
SHBTS            0.072186    -0.034868     0.074672    -0.023251    -0.002485     0.117459    -0.012731
SATTUD           0.089910    -0.051903     0.055413     0.016573    -0.031220     0.087616    -0.031721
SACHV            0.099204    -0.134546     0.152002     0.034034    -0.021737     0.201608    -0.079223
SSEX             0.002646    -0.049798     0.013582     0.003194     0.027439     0.021952    -0.005201
SRACE            0.094662    -0.125793    -0.013331     0.035257    -0.039383     0.035153    -0.090560
PSES             0.140345     0.027681     0.299865     0.027676    -0.041523     0.342189     0.085011
PPTA             0.043937     0.067027     0.034232    -0.010871    -0.051322     0.008582     0.069591
PTURN           -0.003010    -0.196618    -0.057574     0.063440     0.051001    -0.064582    -0.017723
PTENR           -0.065504     0.018276     0.309270     0.013471    -0.010156     0.257708     0.026101
PTEXM           -0.038616     0.090907     0.054346     0.011091    -0.039411     0.012555     0.118119
PWHITE           0.076632    -0.142077    -0.010545     0.037000    -0.060870     0.039758    -0.091233
PPROB            0.017551     0.009212     0.189332     0.035792     0.150837     0.110499     0.026278
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                        6TH GRADE - SET 1   59

CORRELATION MATRIX       SELECTED VARIABLE

                      PPLNT          PEXP          PTRNG          PCOLAT          PINSTF          PSPST          PTRCK

PNWENT            -0.071547      0.008738       0.278256        0.036094        0.019565       0.242532      -0.002388
PHMWK              0.116414      0.041240      -0.164293       -0.024927        0.331917      -0.139063       0.066099
PHRTCH            -0.303710     -0.020798      -0.573995       -0.054108       -0.169989      -0.406498      -0.107932
TWHUND             0.059783     -0.152074       0.059079        0.065714       -0.018975       0.090688      -0.098195
TWHITE             0.080413     -0.128429      -0.027158        0.014129       -0.053728       0.023432      -0.097837
THRTCH            -0.097639     -0.054869       0.288217        0.043326       -0.014378       0.313312       0.058560
TSIZE              0.077679     -0.026110       0.264373       -0.004657       -0.029623       0.180383      -0.029098
SBIRTH             0.149996     -0.108183       0.078780        0.111226        0.041287       0.098466      -0.029180
SMTRBN             0.099187     -0.077032      -0.001941        0.051424       -0.026907       0.045717      -0.048528
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                  6TH GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE

                 PTSTG        PTRNS        PREMD        PFLUN        PACRD       PAGTXT       PAVTXT

PPLNT         0.139181     0.016908     0.060429     0.038634     0.005614    -0.085421    -0.028216
PEXP          0.063067    -0.018480    -0.024853     0.038844    -0.085387     0.108536    -0.027647
PTRNG         0.015809     0.273881     0.175259    -0.195016     0.129008    -0.084411    -0.076143
PCOLAT        0.032660     0.103198     0.048349     0.000793     0.058345    -0.018819     0.016227
PINSTF        0.319947    -0.012501     0.114190     0.091206     0.066182    -0.015106    -0.033023
PSPST         0.109124     0.193551     0.188112    -0.163602     0.211138    -0.063915     0.000945
PTRCK         0.060904     0.025339     0.196443     0.030505     0.020298    -0.024702    -0.065359
PTSTG         1.000000    -0.050811     0.067184     0.070176     0.131126    -0.051464    -0.015550
PTRNS        -0.050811     1.000000     0.084512    -0.034686     0.080701     0.009520    -0.090860
PREMD         0.067184     0.084512     1.000000     0.021350     0.067914    -0.065247    -0.054606
PFLUN         0.070176    -0.034686     0.021350     1.000000    -0.020627    -0.041616    -0.000499
PACRD         0.131126     0.080701     0.067914    -0.020627     1.000000    -0.018628     0.104364
PAGTXT       -0.051464     0.009520    -0.065247    -0.041616    -0.018628     1.000000    -0.082528
PAVTXT       -0.015550    -0.090860    -0.054606    -0.000499     0.104364    -0.082528     1.000000
PRURUB       -0.068444     0.305359     0.090966    -0.225115     0.144471     0.008140    -0.088419
PPTRAT       -0.129174     0.075117     0.025358    -0.153229    -0.125991    -0.028732    -0.094037
PENRL         0.049406     0.258071     0.093822    -0.085732     0.040743    -0.042713    -0.116584
PPRSLR       -0.014154     0.079145     0.051093    -0.022081    -0.077382    -0.009105    -0.018979
PAGBLD       -0.010627    -0.043276    -0.020883     0.038188     0.062572     0.016356     0.024047
PPUPRM       -0.067707     0.120781     0.041289    -0.056256     0.019765    -0.044603    -0.033304
PSEX         -0.027764    -0.019481    -0.077457    -0.019229     0.073760     0.110871     0.003571
PSREP         0.020575    -0.004836     0.005509    -0.047945     0.059692    -0.061084     0.033141
TEXP          0.013005    -0.200276    -0.070271     0.108821    -0.102473     0.011346     0.038756
TCOND         0.025779    -0.140506    -0.145144    -0.205558     0.064407    -0.023987     0.084600
TLOC          0.022774     0.259175     0.119414     0.006985     0.068056    -0.051075     0.013627
TSESB        -0.011459     0.236510     0.034916    -0.224632     0.115329    -0.027758    -0.013186
TTRNG         0.037855     0.213075     0.102441    -0.176617     0.129300    -0.020385    -0.092634
TCOLAT        0.023374     0.210277     0.081610    -0.027129     0.138107    -0.057428     0.069525
TRELAC        0.003199    -0.009366     0.004730     0.033430    -0.124772    -0.006424    -0.069825
TPRHAB       -0.002430     0.077737    -0.006336    -0.117890     0.085596    -0.045304     0.016921
TSEX          0.054912    -0.054263    -0.147619     0.003795    -0.063523     0.019332    -0.016540
TRACE        -0.046134     0.073303    -0.027315    -0.047057     0.241689    -0.025157     0.177334
TSAL          0.022644     0.279322     0.131679    -0.133353     0.218818    -0.072091    -0.058925
TVOCAB        0.008181     0.162967    -0.010727    -0.084137     0.251096    -0.026722     0.127528
SSES          0.007290     0.057769    -0.063492    -0.277473     0.223738    -0.037714     0.125713
SFSS          0.044267    -0.088354    -0.100653    -0.107559     0.149895    -0.035784     0.153560
SEXPTN        0.031571    -0.036261    -0.117089    -0.139781     0.099708     0.009101     0.106850
SEDPLN        0.036197     0.051563    -0.084045    -0.195976     0.191796     0.003816     0.061569
SHBTS         0.048993     0.013127    -0.109057    -0.141197     0.137987     0.010590     0.114989
SATTUD        0.011683     0.018622    -0.085706    -0.111859     0.154571    -0.012574     0.117654
SACHV         0.034604     0.029416    -0.103636    -0.149628     0.254494    -0.044605     0.186901
SSEX          0.010466     0.029243    -0.013921    -0.048730     0.028716    -0.003526     0.013449
SRACE        -0.025512    -0.066842    -0.102601    -0.142760     0.193337    -0.022682     0.190971
PSES         -0.006456     0.117235    -0.009032    -0.252417     0.154437    -0.025245     0.028782
PPTA          0.050206    -0.024248    -0.023408    -0.045724    -0.015802    -0.091268     0.040804
PTURN        -0.057344     0.125136    -0.030737     0.029790     0.033561     0.056072     0.043271
PTENR        -0.013055     0.070801     0.032941    -0.054113     0.162685     0.009349    -0.029902
PTEXM        -0.056788     0.058012     0.024282     0.079708    -0.184699    -0.016986    -0.042423
PWHITE       -0.057313    -0.042425    -0.094742    -0.167163     0.185730    -0.008103     0.147901
PPROB         0.007549     0.214120     0.160897     0.070155     0.000269     0.005204    -0.165973
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE
                                                       6TH GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE

                     PTSTG        PTRNS        PREMD        PFLUN        PACRD       PAGTXT       PAVTXT

PNWENT           -0.017966     0.253126     0.136336    -0.013625     0.106000     0.056329    -0.041537
PHMWK             0.191709    -0.131892     0.033421     0.086257    -0.131329    -0.029673    -0.039136
PHRTCH            0.001908    -0.212054    -0.086999     0.142675    -0.058964     0.049516     0.076962
TWHUND           -0.035461     0.064060    -0.012151    -0.021015     0.241859    -0.034420     0.177612
TWHITE           -0.042878    -0.063701    -0.117231    -0.159561     0.196737    -0.004691     0.171338
THRTCH            0.014986     0.121294     0.022584    -0.155741     0.143965     0.015541    -0.003149
TSIZE             0.008025     0.120293    -0.019361    -0.118092     0.133376    -0.017941     0.072249
SBIRTH            0.020052     0.078968     0.018690    -0.142692     0.131769    -0.035902     0.115732
SMTRBN            0.018087    -0.023037    -0.060966    -0.216586     0.078039    -0.042515     0.080417
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE
6TH GRADE - SET 1   59

CORRELATION MATRIX   SELECTED VARIABLE

	PRURUB	PPTRAT	PENRL	PPRSLR	PAGBLD	PPUPRM	PSEX
PPLNT	-0.038577	-0.032740	0.300327	0.024039	-0.329114	-0.004939	-0.244381
PEXP	0.009055	0.065099	0.093475	0.058019	0.022570	0.060285	0.175138
PTRNG	0.462708	0.111293	0.476259	0.080878	-0.073936	0.104213	-0.195492
PCOLAT	0.031862	-0.017517	0.038158	0.018237	-0.056222	-0.011492	-0.062145
PINSTF	-0.050556	-0.168030	0.269657	-0.027310	-0.003507	-0.020928	-0.171105
PSPST	0.374939	0.025197	0.508726	0.014926	-0.077513	0.117177	-0.107365
PTRCK	0.062768	0.019236	0.138013	-0.001198	-0.093716	0.040027	-0.017909
PTSTG	-0.068444	-0.129174	0.049406	-0.014154	-0.010627	-0.067707	-0.027764
PTRNS	0.305359	0.075117	0.258071	0.079145	-0.043276	0.120781	-0.019481
PREMD	0.090966	0.025358	0.093822	0.051093	-0.020883	0.041289	-0.077457
PFLUN	-0.225115	-0.153229	-0.085732	-0.022081	0.038188	-0.056256	-0.019229
PACRD	0.144471	-0.125991	0.040743	-0.077382	0.062572	0.019765	0.073760
PAGTXT	0.008140	-0.028732	-0.042713	-0.009105	0.016356	-0.044603	0.110871
PAVTXT	-0.088419	-0.094037	-0.116584	-0.018979	0.024047	-0.033304	0.003571
PRURUB	1.000000	0.258563	0.403067	0.056870	0.082856	0.141160	0.058658
PPTRAT	0.258563	1.000000	0.316254	0.026379	-0.058632	0.292580	0.003317
PENRL	0.403067	0.316254	1.000000	0.019790	-0.140089	0.219144	-0.121614
PPRSLR	0.056870	0.026379	0.019790	1.000000	-0.001197	-0.031389	0.021523
PAGBLD	0.082856	-0.058632	-0.140089	-0.001197	1.000000	-0.081441	0.122325
PPUPRM	0.141160	0.292580	0.219144	-0.031389	-0.081441	1.000000	-0.029005
PSEX	0.058658	0.003317	-0.121614	0.021523	0.122325	-0.029005	1.000000
PSREP	0.113041	0.027607	0.087137	0.013044	-0.140152	-0.017052	0.033599
TEXP	-0.191776	-0.063123	-0.171067	-0.034269	0.211450	-0.055303	0.020396
TCOND	0.000743	-0.022504	-0.053105	-0.037274	-0.149371	-0.067826	0.037581
TLOC	0.049712	-0.054864	0.045613	0.134496	-0.186819	0.027672	-0.109502
TSESB	0.356251	0.125373	0.222729	0.058118	-0.078802	0.087978	-0.061838
TTRNG	0.436873	0.117078	0.292886	0.050193	0.001434	0.122095	-0.092357
TCOLAT	0.153416	0.010500	0.133561	0.117561	-0.081589	0.042704	-0.065656
TRELAC	-0.036309	0.040420	0.010685	-0.012996	-0.074755	0.037602	0.000882
TPRHAB	0.161235	0.097831	0.122769	0.001635	-0.002989	0.010641	0.007349
TSEX	-0.036158	-0.006781	-0.039084	-0.025692	0.025119	-0.000158	0.123765
TRACE	-0.006782	-0.108139	-0.087810	0.075417	0.075571	-0.044739	-0.007794
TSAL	0.438995	0.053351	0.286591	0.099751	0.009920	0.110341	-0.047819
TVOCAB	0.182939	-0.079113	0.048987	0.067119	0.040503	-0.023424	-0.009090
SSES	0.242149	-0.013352	0.089522	0.039382	-0.038639	-0.008943	0.001912
SFSS	-0.072357	-0.137057	-0.115530	0.014956	0.041102	-0.068413	0.002627
SEXPTN	-0.022557	-0.099121	-0.088233	0.027463	0.042903	-0.052882	-0.003531
SEDPLN	0.170334	-0.065095	0.041787	0.023487	0.000848	-0.017658	-0.001485
SHBTS	0.058015	-0.076399	-0.029355	0.019320	0.042152	-0.036086	0.009319
SATTUD	0.021737	-0.089402	-0.065478	0.028812	0.037390	-0.044580	0.029464
SACHV	0.078460	-0.123373	-0.032332	0.024281	0.015586	-0.064278	0.033211
SSEX	0.018195	-0.057881	-0.012397	-0.020618	0.030592	-0.012390	-0.007549
SRACE	-0.078493	-0.093965	-0.142792	0.034950	0.034729	-0.100953	0.021695
PSES	0.374888	0.195225	0.276879	-0.032073	-0.099898	0.057340	-0.054850
PPTA	0.048554	-0.007861	-0.042066	-0.014064	-0.046975	-0.038278	0.090290
PTURN	-0.049431	-0.099180	-0.065684	0.003221	-0.050765	-0.028216	-0.034092
PTENR	0.185463	0.083020	0.113611	0.019575	0.095180	0.043984	0.025295
PTEXM	0.200526	0.105412	0.147064	-0.027247	0.071047	0.023847	0.031938
PWHITE	-0.061298	-0.091709	-0.147746	0.068106	0.041891	-0.101815	0.025656
PPROB	0.190664	0.044207	0.217354	0.062239	0.023212	0.104710	-0.043663

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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                            6TH GRADE - SET 1   59

CORRELATION MATRIX       SELECTED VARIABLE

                      PRURUB       PPTRAT        PENRL       PPRSLR       PAGBLD       PPUPRM         PSEX

PNWENT              0.206802     0.025874     0.155349     0.071280     0.120549     0.068706    -0.061136
PHMWK              -0.307192    -0.077564     0.009571    -0.088643    -0.043769    -0.044253    -0.143275
PHRTCH             -0.419414    -0.178108    -0.509482    -0.051709     0.118239    -0.099849     0.181954
TWHUND              0.004478    -0.096363    -0.082997     0.068651     0.103979    -0.042238    -0.002217
TWHITE             -0.070516    -0.059912    -0.144413     0.037434     0.024371    -0.089079     0.013175
THRTCH              0.260336     0.065337     0.159755     0.048490     0.025207     0.060256     0.021946
TSIZE               0.153512    -0.030388     0.095513     0.042547    -0.085281     0.042907    -0.064319
SBIRTH             -0.009095    -0.091944    -0.001155     0.037292    -0.094575    -0.063809    -0.111116
SMTRBN              0.001413    -0.031066    -0.045021     0.044183    -0.073851    -0.068462    -0.006419
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                        6TH GRADE - SET 1    59

CORRELATION MATRIX       SELECTED VARIABLE

                  PSREP          TEXP          TCOND           TLOC          TSESB          TTRNG         TCOLAT

PPLNT          0.195316     -0.027914       0.168589       0.113629       0.116889       0.109630       0.080974
PEXP           0.124241      0.214931       0.001617      -0.129759      -0.064578       0.089030      -0.094035
PTRNG          0.122639     -0.216030       0.053366       0.189077       0.357608       0.575541       0.289852
PCOLAT         0.021677     -0.093831      -0.029073       0.185207       0.120301       0.052174       0.253190
PINSTF         0.012335      0.031140      -0.029292       0.073426      -0.039614       0.062918       0.050544
PSPST          0.162953     -0.267572       0.053003       0.149737       0.345837       0.481012       0.231144
PTRCK          0.115894     -0.049687      -0.027563       0.032123       0.018147       0.031845      -0.021033
PTSTG          0.020575      0.013005       0.025779       0.022774      -0.011459       0.037855       0.023374
PTRNS         -0.004836     -0.200276      -0.140506       0.259175       0.236510       0.213075       0.210277
PREMD          0.005509     -0.070271      -0.145144       0.119414       0.034916       0.102441       0.081610
PFLUN         -0.047945      0.108821      -0.205558       0.006985      -0.224632      -0.176617      -0.027129
PACRD          0.059692     -0.102473       0.064407       0.068056       0.115329       0.129300       0.138107
PAGTXT        -0.061084      0.011346      -0.023987      -0.051075      -0.027758      -0.020385      -0.05[illegible]
PAVTXT         0.033141      0.038756       0.084600       0.013627      -0.013186      -0.092634       0.06[illegible]
PRURUB         0.113041     -0.191776       0.000743       0.049712       0.356251       0.436873       0.15341[illegible]
PPTRAT         0.027607     -0.063123      -0.022504      -0.054854       0.125373       0.117078       0.010500
PENRL          0.087137     -0.171067      -0.053105       0.045613       0.222729       0.292886       0.133561
PPRSLR         0.013044     -0.034269      -0.037274       0.134496       0.058118       0.050193       0.117561
PAGBLD        -0.140152      0.211450      -0.149371      -0.185819      -0.078802       0.001434      -0.081589
PPUPRM        -0.017052     -0.055303      -0.067826       0.027672       0.087978       0.122095       0.042704
PSEX           0.033599      0.020396       0.037581      -0.109502      -0.061838      -0.092357      -0.065656
PSREP          1.000000     -0.012546       0.384267       0.034602       0.143261       0.159703       0.092363
TEXP          -0.012546      1.000000       0.013795      -0.312463      -0.442239       0.024446      -0.248861
TCOND          0.384267      0.013795       1.000000      -0.016501       0.167936       0.119908       0.107519
TLOC           0.034602     -0.312463      -0.016501       1.000000       0.257543       0.158244       0.268752
TSESB          0.143261     -0.442239       0.167936       0.257543       1.000000       0.298596       0.331113
TTRNG          0.159703      0.024446       0.119908       0.158244       0.298596       1.000000       0.222070
TCOLAT         0.092363     -0.248862       0.107519       0.268752       0.331113       0.222070       1.000000
TRELAC         0.013810      0.070896      -0.037296       0.045331      -0.075716       0.044296      -0.115682
TPRHAB         0.212028     -0.081997       0.303094       0.065039       0.327443       0.250509       0.191304
TSEX           0.003805      0.234689       0.082379      -0.164583      -0.034662      -0.090036      -0.042756
TRACE          0.140247     -0.054492       0.333567       0.116031       0.300221       0.012131       0.361576
TSAL           0.130353     -0.114443       0.091527       0.281364       0.363891       0.813690       0.326370
TVOCAB         0.141574     -0.127034       0.277265       0.191232       0.397069       0.247219       0.382600
SSES           0.336330     -0.162757       0.610494       0.128731       0.406524       0.261932       0.279548
SFSS           0.192504     -0.034510       0.419202      -0.015360       0.140273      -0.009817       0.179139
SEXPTN         0.146306     -0.010625       0.282392      -0.021334       0.130597      -0.023675       0.106990
SEDPLN         0.232151     -0.096915       0.414556       0.036032       0.260799       0.206828       0.176065
SHBTS          0.200102     -0.032225       0.338038      -0.009135       0.166132       0.083992       0.116983
SATTUD         0.178137     -0.025178       0.333250       0.018736       0.177135       0.058613       0.145618
SACHV          0.278576     -0.124018       0.593993       0.137502       0.294082       0.155267       0.291668
SSEX           0.012690     -0.022259       0.002874      -0.001084       0.060554       0.032939       0.005777
SRACE          0.226029     -0.013348       0.536631       0.018916       0.215116      -0.045107       0.232063
PSES           0.296914     -0.163441       0.370897       0.120119       0.405020       0.316328       0.195228
PPTA           0.189280     -0.015929       0.256909      -0.018196       0.062067       0.027586       0.002085
PTURN         -0.103121     -0.210573      -0.061106       0.198558       0.072843      -0.126691       0.083835
PTENR          0.009549     -0.086524      -0.002708       0.055852       0.164991       0.382186       0.119519
PTEXM          0.005027      0.007403      -0.125976      -0.156273       0.022899      -0.005036      -0.082480
PWHITE         0.181303     -0.013715       0.471812       0.058338       0.232610      -0.045830       0.249526
PPROB         -0.149229     -0.032983      -0.306005       0.056501       0.057491       0.137520       0.078468
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                        6TH GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE

                    PSREP          TEXP          TCOND          TLOC          TSESB          TTRNG          TCOLAT

PNWENT          -0.050184     -0.065891     -0.129557      0.132341      0.156468      0.295157      0.193764
PHMWK           -0.074384      0.199117     -0.095059     -0.135178     -0.229971     -0.213286     -0.139787
PHRTCH          -0.131555      0.151406     -0.090167     -0.153732     -0.279925     -0.357060     -0.157844
TWHUND           0.134033     -0.025525      0.300481      0.106050      0.262174     -0.003353      0.339431
TWHITE           0.198501     -0.007081      0.507497      0.017872      0.231171     -0.058979      0.233929
THRTCH           0.008173     -0.185293      0.019533      0.095726      0.283311      0.240575      0.203334
TSIZE            0.120135     -0.155014      0.148469      0.147829      0.235192      0.245247      0.194228
SBIRTH           0.179313     -0.129346      0.296769      0.263354      0.175752      0.038639      0.230748
SMTRBN           0.237606     -0.074189      0.438020      0.144066      0.205966      0.052305      0.169507
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                    6TH GRADE - SET 1   59

CORRELATION MATRIX       SELECTED VARIABLE

                    TRELAC          TPRHAB            TSEX           TRACE            TSAL          TVOCAB            SSES

PPLNT             0.029190        0.153253        0.010876        0.066557        0.084075        0.090283        0.160486
PEXP              0.028711       -0.045991        0.078523       -0.158340       -0.010154       -0.106902       -0.085404
PTRNG            -0.019245        0.202511       -0.168556        0.065392        0.623762        0.225612        0.264112
PCOLAT           -0.048359        0.036361        0.026538        0.070968        0.097980        0.070792        0.041670
PINSTF           -0.008585        0.034578       -0.059747       -0.020400        0.050416       -0.014469       -0.009460
PSPST            -0.057126        0.154871       -0.195044        0.098288        0.556092        0.249258        0.304070
PTRCK             0.030423       -0.004609       -0.054881       -0.103653        0.034239       -0.047303       -0.022187
PTSTG             0.003199       -0.002430        0.054912       -0.046134        0.022644        0.008181        0.007290
PTRNS            -0.009366        0.077737       -0.054263        0.073303        0.279322        0.162967        0.057769
PREMD             0.004730       -0.006336       -0.147619       -0.027315        0.131679       -0.010727       -0.063492
PFLUN             0.033430       -0.117890        0.003795       -0.047057       -0.133353       -0.084137       -0.277475
PACRD            -0.124772        0.085596       -0.063523        0.241689        0.218818        0.251096        0.223738
PAGTXT           -0.006424       -0.045304        0.019332       -0.025157       -0.072091       -0.026722       -0.037714
PAVTXT           -0.069825        0.016921       -0.016540        0.177334       -0.058925        0.127528        0.125713
PRURUB           -0.036309        0.161235       -0.036158       -0.006782        0.438995        0.182939        0.242149
PPTRAT            0.040420        0.097831       -0.006781       -0.108139        0.053351       -0.079113       -0.013352
PENRL             0.010685        0.122769       -0.039084       -0.087810        0.286591        0.048987        0.089522
PPRSLR           -0.012996        0.001635       -0.025692        0.075417        0.099751        0.067119        0.039382
PAGBLD           -0.074755       -0.002989        0.025119        0.075571        0.009920        0.040503       -0.038639
PPUPRM            0.037602        0.010641       -0.000158       -0.044739        0.110341       -0.023424       -0.008943
PSEX              0.000882        0.007349        0.123765       -0.007794       -0.047819       -0.009090        0.001912
PSREP             0.013810        0.212028        0.003805        0.140247        0.130353        0.141574        0.336330
TEXP              0.070896       -0.081997        0.234689       -0.054492       -0.114443       -0.127034       -0.162757
TCOND            -0.037296        0.303094        0.082379        0.333567        0.091527        0.277265        0.610494
TLOC              0.045331        0.065039       -0.164583        0.116031        0.281364        0.191232        0.128731
TSESB            -0.075716        0.327443       -0.034662        0.300221        0.363891        0.397069        0.406524
TTRNG             0.044296        0.250509       -0.090036        0.012131        0.813690        0.247219        0.261932
TCOLAT           -0.115682        0.191304       -0.042756        0.361576        0.326370        0.382600        0.279548
TRELAC            1.000000       -0.097205        0.063197       -0.342959       -0.018345       -0.236304       -0.118703
TPRHAB           -0.097205        1.000000        0.000299        0.335678        0.219486        0.284341        0.416971
TSEX              0.063197        0.000299        1.000000       -0.045041       -0.183843       -0.066570       -0.034294
TRACE            -0.342959        0.335678       -0.045041        1.000000        0.157931        0.652796        0.568977
TSAL             -0.018345        0.219486       -0.183843        0.157931        1.000000        0.376411        0.325885
TVOCAB           -0.236304        0.284341       -0.066570        0.652796        0.376411        1.000000        0.539328
SSES             -0.118703        0.416971       -0.034294        0.568977        0.325885        0.539328        1.000000
SFSS             -0.203937        0.262323       -0.003241        0.598101        0.083088        0.434774        0.604242
SEXPTN           -0.111056        0.208061        0.069389        0.395133        0.014985        0.290992        0.484247
SEDPLN           -0.098347        0.272660        0.015628        0.400945        0.241498        0.397768        0.639576
SHBTS            -0.089031        0.261308        0.005652        0.419382        0.124517        0.389941        0.599330
SATTUD           -0.098718        0.241579        0.004014        0.476609        0.126038        0.401150        0.576381
SACHV            -0.183770        0.378129       -0.014048        0.726296        0.270474        0.620104        0.817421
SSEX             -0.001669        0.071361        0.046554        0.105520        0.059193        0.089249        0.153721
SRACE            -0.272333        0.361615        0.025334        0.854376        0.047257        0.552909        0.672018
PSES             -0.056897        0.319639       -0.073818        0.265128        0.268498        0.291697        0.532066
PPTA              0.101311        0.085770        0.066334        0.028149       -0.003414        0.044150        0.199833
PTURN            -0.022772        0.024133       -0.068790        0.125528       -0.052548        0.108444        0.033961
PTENR            -0.084028        0.133118       -0.122704        0.096258        0.409199        0.174632        0.138911
PTEXM            -0.010609       -0.013999        0.062774       -0.225525       -0.037692       -0.179147       -0.138237
PWHITE           -0.275287        0.355500       -0.021624        0.822470        0.051819        0.520249        0.583356
PPROB             0.033290       -0.018053       -0.029085       -0.083324        0.148801       -0.017151       -0.145821
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                6TH GRADE - SET 1   59

CORRELATION MATRIX       SELECTED VARIABLE

                    TRELAC        TPRHAB          TSEX         TRACE          TSAL        TVOCAB          SSES

PNWENT           -0.058540      0.005194     -0.116450      0.122938      0.362862      0.213369      0.047809
PHMWK             0.074954     -0.082743      0.086104     -0.236295     -0.312854     -0.261996     -0.254443
PHRTCH           -0.030384     -0.203625      0.030945     -0.042696     -0.357127     -0.144154     -0.246022
TWHUND           -0.347575      0.325532     -0.064514      0.951501      0.142825      0.643053      0.535502
TWHITE           -0.295135      0.355828     -0.003544      0.845257      0.021781      0.532131      0.610562
THRTCH           -0.170271      0.129647     -0.119739      0.154866      0.384917      0.234292      0.212665
TSIZE             0.003584      0.131215     -0.025684      0.234729      0.255412      0.354869      0.287989
SBIRTH           -0.059705      0.144800     -0.041531      0.398585      0.120418      0.354725      0.519311
SMTRBN           -0.052408      0.208271      0.007415      0.402564      0.096964      0.305095      0.586492
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE

6TH GRADE - SET 1 59

CORRELATION MATRIX SELECTED VARIABLE

	SFSS	SEXPTN	SEDPLN	SHBTS	SATTUD	SACHV	SSEX
PPLNT	0.098174	0.066006	0.096351	0.072186	0.089910	0.099204	0.002646
PEXP	-0.094409	-0.009356	-0.040555	-0.034868	-0.051903	-0.134546	-0.049798
PTRNG	-0.005457	-0.025647	0.166743	0.074672	0.055413	0.152002	0.013582
PCOLAT	0.015192	0.014047	0.006529	-0.023251	0.016573	0.034034	0.003194
PINSTF	0.007222	0.012613	-0.000264	-0.002485	-0.031220	-0.021737	0.027439
PSPST	0.053656	0.009319	0.203801	0.117459	0.087616	0.201608	0.021952
PTRCK	-0.067841	-0.036936	-0.003833	-0.012731	-0.031721	-0.079223	-0.005201
PTSTG	0.044267	0.031571	0.036197	0.048993	0.011683	0.034604	0.010466
PTRNS	-0.088354	-0.036261	0.051563	0.013127	0.018623	0.029416	0.029243
PREMD	-0.100653	-0.117089	-0.084045	-0.109057	-0.085706	-0.103636	-0.013921
PFLUN	-0.107559	-0.139781	-0.195976	-0.141197	-0.111859	-0.149628	-0.048730
PACRD	0.149895	0.099708	0.191796	0.137987	0.154571	0.254494	0.028716
PAGTXT	-0.035784	0.009101	0.003816	0.010590	-0.012574	-0.044605	-0.003526
PAVTXT	0.153560	0.106850	0.061569	0.114989	0.117654	0.186901	0.013449
PRURUB	-0.072357	-0.022557	0.170334	0.058015	0.021737	0.078460	0.018195
PPTRAT	-0.137057	-0.099121	-0.065095	-0.076399	-0.089402	-0.123373	-0.057881
PENRL	-0.115530	-0.088233	0.041787	-0.029355	-0.065478	-0.032332	-0.012397
PPRSLR	0.014956	0.027463	0.023487	0.019320	0.028812	0.024281	-0.020618
PAGBLD	0.041102	0.042903	0.000848	0.042152	0.037390	0.015586	0.030592
PPUPRM	-0.068413	-0.052882	-0.017658	-0.036086	-0.044580	-0.064278	-0.012390
PSEX	0.002627	-0.003531	-0.001485	0.009319	0.029464	0.033211	-0.007549
PSREP	0.192504	0.146306	0.232151	0.200102	0.178137	0.278576	0.012690
TEXP	-0.034510	-0.010625	-0.095915	-0.032225	-0.025178	-0.124018	-0.022259
TCOND	0.419202	0.282392	0.414556	0.338038	0.333250	0.593993	0.002874
TLOC	-0.015360	-0.021334	0.036032	-0.009135	0.018736	0.137502	-0.001084
TSESB	0.140273	0.130597	0.260799	0.166132	0.177135	0.294082	0.060554
TTRNG	-0.009817	-0.023675	0.206828	0.083992	0.058613	0.155267	0.032939
TCOLAT	0.179139	0.106990	0.176085	0.116983	0.145618	0.291688	0.005777
TRELAC	-0.203937	-0.111056	-0.098347	-0.089031	-0.098718	-0.183770	-0.001669
TPRHAB	0.262323	0.208061	0.272660	0.261308	0.241579	0.378129	0.071361
TSEX	-0.003241	0.069389	0.015628	0.005652	0.004014	-0.014048	0.046554
TRACE	0.598101	0.396133	0.400945	0.419382	0.476609	0.726296	0.105520
TSAL	0.083088	0.014985	0.241498	0.124517	0.126038	0.270474	0.059193
TVOCAB	0.434774	0.290992	0.397768	0.389941	0.401150	0.620104	0.089249
SSES	0.604242	0.484247	0.639576	0.599330	0.576381	0.817421	0.153721
SFSS	1.000000	0.672164	0.610971	0.717978	0.733463	0.669292	0.375853
SEXPTN	0.672164	1.000000	0.724737	0.760824	0.768591	0.500403	0.319279
SEDPLN	0.610971	0.724737	1.000000	0.767084	0.729978	0.638710	0.296068
SHBTS	0.717978	0.760824	0.767084	1.000000	0.860152	0.588478	0.391088
SATTUD	0.733463	0.768591	0.729978	0.860152	1.000000	0.599445	0.367278
SACHV	0.669292	0.500403	0.638710	0.588478	0.599445	1.000000	0.135768
SSEX	0.375853	0.319279	0.296068	0.391088	0.367278	0.135768	1.000000
SRACE	0.663354	0.456720	0.449139	0.465722	0.514249	0.799000	0.091072
PSES	0.179242	0.121810	0.342762	0.248045	0.199994	0.387977	-0.005248
PPTA	0.114090	0.065915	0.119844	0.098999	0.082098	0.132902	-0.019481
PTURN	0.057606	0.042600	0.009837	0.042519	0.057013	0.078663	0.043368
PTENR	0.045789	-0.038282	0.080163	0.052588	0.056748	0.087860	0.004954
PTEXM	-0.171279	-0.091779	-0.096733	-0.088057	-0.117279	-0.213708	-0.035817
PWHITE	0.590659	0.403930	0.382662	0.394282	0.449482	0.699928	0.074374
PPROB	-0.183942	-0.125738	-0.133322	-0.161098	-0.170862	-0.194788	-0.019174

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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                        6TH GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE

                    SFSS          SEXPTN         SEDPLN          SHBTS         SATTUD          SACHV           SSEX

PNWENT         -0.028518      -0.037754       0.066186       0.021772       0.019645       0.053857       0.042838
PHMWK          -0.141467      -0.054999      -0.166016      -0.118206      -0.150043      -0.243574      -0.067589
PHRTCH         -0.013584      -0.009976      -0.136856      -0.076152      -0.049300      -0.121891      -0.038214
TWHUND          0.582360       0.388064       0.378018       0.394181       0.455997       0.698899       0.088016
TWHITE          0.617632       0.419083       0.391659       0.424966       0.476929       0.729781       0.078640
THRTCH          0.042773      -0.016496       0.117898       0.036222       0.045315       0.169909       0.017936
TSIZE           0.152024       0.111325       0.230524       0.197921       0.153344       0.268142       0.034207
SBIRTH          0.470150       0.378259       0.403277       0.392588       0.436983       0.520669       0.221015
SMTRBN          0.579835       0.484299       0.515453       0.533770       0.543467       0.586714       0.236277
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                  6TH GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE

                   SRACE          PSES           PPTA          PTURN          PTENR          PTEXM         PWHITE

PPLNT           0.094662       0.140345       0.043937      -0.003010      -0.065504      -0.038616       0.076632
PEXP           -0.125793       0.027681       0.067027      -0.196618       0.018276       0.090907      -0.142077
PTRNG          -0.013331       0.299865       0.034232      -0.057574       0.309270       0.054346      -0.010545
PCOLAT          0.035257       0.027676      -0.010871       0.063440       0.013471       0.011091       0.037000
PINSTF         -0.039383      -0.041523      -0.051322       0.051001      -0.010156      -0.039411      -0.060870
PSPST           0.035153       0.342189       0.008582      -0.064582       0.257708       0.012555       0.039758
PTRCK          -0.090560       0.085011       0.069591      -0.017723       0.026101       0.118119      -0.091233
PTSTG          -0.025512      -0.006456       0.050206      -0.057344      -0.013055      -0.056788      -0.057313
PTRNS          -0.066842       0.117235      -0.024248       0.125136       0.070801       0.058012      -0.042425
PREMD          -0.102601      -0.009032      -0.023408      -0.030737       0.032941       0.024282      -0.094742
PFLUN          -0.142760      -0.252417      -0.045724       0.029790      -0.054113       0.079708      -0.167163
PACRD           0.193337       0.154437      -0.015802       0.033561       0.162685      -0.184699       0.185730
PAGTXT         -0.022682      -0.025245      -0.091268       0.056072       0.009349      -0.016986      -0.008103
PAVTXT          0.190971       0.028782       0.040804       0.043271      -0.029902      -0.042423       0.147901
PRURUB         -0.078493       0.374888       0.048554      -0.049431       0.185463       0.200526      -0.061298
PPTRAT         -0.093965       0.195225      -0.007861      -0.099180       0.083020       0.105412      -0.091709
PENRL          -0.142792       0.276879      -0.042066      -0.065684       0.113611       0.147064      -0.147746
PPRSLR          0.034950      -0.032073      -0.014064       0.003221       0.019575      -0.027247       0.068106
PAGBLD          0.034729      -0.099898      -0.046975      -0.050765       0.095180       0.071047       0.041891
PPUPRM         -0.100953       0.057340      -0.038278      -0.028216       0.043984       0.023847      -0.101815
PSEX            0.021695      -0.054850       0.090290      -0.034092       0.025295       0.031938       0.025656
PSREP           0.226029       0.298914       0.189280      -0.103121       0.009549       0.005027       0.181303
TEXP           -0.013348      -0.163441      -0.015929      -0.210573      -0.086524       0.007403      -0.013715
TCOND           0.536631       0.370897       0.256909      -0.061106      -0.002708      -0.125976       0.471812
TLOC            0.018916       0.120119      -0.018196       0.198558       0.055852      -0.156273       0.058338
TSESB           0.215116       0.405020       0.062067       0.072843       0.164991       0.022899       0.232610
TTRNG          -0.040107       0.316328       0.027586      -0.126691       0.382186      -0.005036      -0.045830
TCOLAT          0.232063       0.195228       0.002085       0.083855       0.119519      -0.082480       0.249526
TRELAC         -0.272333      -0.056897       0.101311      -0.022772      -0.084028      -0.010609      -0.275287
TPRHAB          0.361615       0.319639       0.085770       0.024133       0.133118      -0.013999       0.355500
TSEX            0.025334      -0.073818       0.066334      -0.068790      -0.122704       0.062774      -0.021624
TRACE           0.854376       0.265128       0.028149       0.125528       0.096258      -0.225525       0.822470
TSAL            0.047257       0.268498      -0.003414      -0.052548       0.409199      -0.037692       0.051819
TVOCAB          0.552909       0.291697       0.044150       0.108444       0.174632      -0.179147       0.520249
SSES            0.672018       0.532066       0.199833       0.033961       0.138911      -0.138237       0.583356
SFSS            0.663354       0.179242       0.114090       0.057606       0.045789      -0.171279       0.590659
SEXPTN          0.456720       0.121810       0.065915       0.042600      -0.038282      -0.091779       0.403950
SEDPLN          0.449139       0.342762       0.119844       0.009837       0.080163      -0.096733       0.382662
SHBTS           0.465722       0.248045       0.098999       0.042519       0.052588      -0.088057       0.394282
SATTUD          0.514249       0.199994       0.082098       0.057013       0.056748      -0.117279       0.449482
SACHV           0.799000       0.387977       0.132902       0.078663       0.087860      -0.213708       0.699928
SSEX            0.091072      -0.005248      -0.019481       0.043368       0.004954      -0.035817       0.074374
SRACE           1.000000       0.305169       0.107631       0.086089       0.039524      -0.216227       0.880805
PSES            0.305169       1.000000       0.191753      -0.036228       0.125411       0.012624       0.280408
PPTA            0.107631       0.191753       1.000000      -0.023006       0.035478       0.009467       0.068628
PTURN           0.086089      -0.036228      -0.023006       1.000000      -0.005357      -0.077451       0.061389
PTENR           0.039524       0.125411       0.035478      -0.005357       1.000000      -0.039621       0.015274
PTEXM          -0.216227       0.012624       0.009467      -0.077451      -0.039621       1.000000      -0.209455
PWHITE          0.880805       0.280408       0.068628       0.061389       0.015274      -0.209455       1.000000
PPROB          -0.237851      -0.071721      -0.125528      -0.015008       0.033628       0.082860      -0.237915
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                                6TH GRADE - SET 1   59

CORRELATION MATRIX       SELECTED VARIABLE

                        SRACE           PSES            PPTA            PTURN           PTENR           PTEXM           PWHITE

PNWENT              -0.074910        0.048853       -0.047220        0.030281        0.198238        0.024978       -0.087863
PHMWK               -0.155051       -0.158757       -0.004226       -0.024336       -0.133797        0.030874       -0.186614
PHRTCH              -0.011456       -0.353207       -0.017815        0.040697       -0.127650       -0.058494       -0.007679
TWHUND               0.817595        0.235568        0.016800        0.111639        0.077069       -0.204307        0.782028
TWHITE               0.926764        0.292083        0.072462        0.074956        0.020769       -0.215564        0.899247
THRTCH               0.092928        0.208797       -0.012385        0.053610        0.271903        0.088367        0.076243
TSIZE                0.180183        0.256368        0.049974       -0.029017        0.101651       -0.115121        0.180489
SBIRTH               0.461887        0.229968        0.060835        0.100509        0.010227       -0.189218        0.375979
SMTRBN               0.517528        0.264595        0.132193        0.062534        0.013159       -0.157909        0.458395
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE 6TH GRADE - SET 1 59

CORRELATION MATRIX SELECTED VARIABLE

	PPROB	PNWENT	PHMWK	PHRTCH	TWHUND	TWHITE	THRTCH
PPLNT	0.017551	-0.071547	0.116414	-0.303710	0.059783	0.080413	-0.097639
PEXP	0.009212	0.008738	0.041240	-0.020798	-0.152074	-0.128429	-0.054869
PTRNG	0.169332	0.278256	-0.164293	-0.573995	0.059079	-0.027158	0.288217
PCOLAT	0.035792	0.036094	-0.024927	-0.054108	0.065714	0.014129	0.043326
PINSTF	0.150837	0.019565	0.331917	-0.169989	-0.018975	-0.053728	-0.014378
PSPST	0.110499	0.242532	-0.139063	-0.406498	0.090688	0.023432	0.313312
PTRCK	0.026278	-0.002388	0.066099	-0.107932	-0.098195	-0.097837	0.058560
PTSTG	0.007549	-0.017966	0.191709	0.001908	-0.035461	-0.042878	0.014986
PTRNS	0.214120	0.253126	-0.131892	-0.212054	0.064060	-0.063701	0.121294
PREMD	0.160897	0.136336	0.033421	-0.086999	-0.012151	-0.117231	0.022584
PFLUN	0.070155	-0.013625	0.086257	0.142675	-0.021015	-0.159561	-0.155741
PACRD	0.000269	0.106000	-0.131329	-0.058964	0.241859	0.196737	0.143965
PAGTXT	0.005204	0.056329	-0.029673	0.049516	-0.034420	-0.004691	0.015541
PAVTXT	-0.165973	-0.041537	-0.039136	0.076962	0.177612	0.171338	-0.003149
PRURUB	0.190664	0.206802	-0.307192	-0.419414	0.004478	-0.070516	0.260336
PPTRAT	0.044207	0.025874	-0.077564	-0.178108	-0.096363	-0.059912	0.065337
PENRL	0.217354	0.155349	0.009571	-0.509482	-0.082997	-0.144413	0.159755
PPRSLR	0.062239	0.071280	-0.088643	-0.051709	0.068651	0.037434	0.048490
PAGBLD	0.023212	0.120549	-0.043769	0.118239	0.103979	0.024371	0.025207
PPUPRM	0.104710	0.068706	-0.044253	-0.099849	-0.042238	-0.069079	0.060256
PSEX	-0.043663	-0.061136	-0.143275	0.181954	-0.002217	0.013175	0.021946
PSREP	-0.149229	-0.050184	-0.074384	-0.131555	0.134033	0.198501	0.008173
TEXP	-0.032983	-0.065891	0.199117	0.151406	-0.025525	-0.007081	-0.185293
TCOND	-0.306005	-0.129557	-0.095059	-0.090167	0.300481	0.507497	0.019533
TLOC	0.056501	0.132341	-0.135178	-0.153732	0.106050	0.017872	0.095726
TSESB	0.057491	0.156468	-0.229971	-0.279925	0.262174	0.231171	0.283311
TTRNG	0.137520	0.295157	-0.213286	-0.357060	-0.003353	-0.058979	0.240575
TCOLAT	0.078468	0.193764	-0.139787	-0.157844	0.339431	0.233929	0.203334
TRELAC	0.033290	-0.058540	0.074954	-0.030384	-0.347575	-0.295135	-0.170271
TPRHAB	-0.018053	0.005194	-0.082743	-0.203625	0.325532	0.355828	0.129647
TSEX	-0.029085	-0.116450	0.086104	0.030945	-0.064514	-0.003544	-0.119739
TRACE	-0.083324	0.122938	-0.236295	-0.042696	0.951501	0.845257	0.154866
TSAL	0.148801	0.362862	-0.312854	-0.357127	0.142825	0.021781	0.384917
TVOCAB	-0.017151	0.213369	-0.261996	-0.144154	0.643053	0.532131	0.234292
SSES	-0.145821	0.047809	-0.254443	-0.246022	0.535502	0.610562	0.212665
SFSS	-0.183942	-0.028518	-0.141467	-0.013584	0.582360	0.617632	0.042773
SEXPTN	-0.125738	-0.037754	-0.054999	-0.009976	0.388064	0.419083	-0.016496
SEDPLN	-0.133322	0.066186	-0.166016	-0.136856	0.378018	0.391659	0.117898
SHBTS	-0.161098	0.021772	-0.118206	-0.076152	0.394181	0.424966	0.036222
SATTUD	-0.170862	0.019645	-0.150043	-0.049300	0.455997	0.476929	0.045315
SACHV	-0.194788	0.053857	-0.243574	-0.121891	0.698899	0.729781	0.169909
SSEX	-0.019104	0.042838	-0.067589	-0.038214	0.088016	0.078640	0.017936
SRACE	-0.237851	-0.074910	-0.155051	-0.011456	0.817595	0.926764	0.092928
PSES	-0.071721	0.048853	-0.158757	-0.353207	0.235568	0.292083	0.208797
PPTA	-0.125528	-0.047220	-0.004226	-0.017815	0.016800	0.072462	-0.012385
PTURN	-0.015008	0.030281	-0.024336	0.040697	0.111639	0.074956	0.053610
PTENR	0.033628	0.198238	-0.133797	-0.127650	0.077069	0.020769	0.271903
PTEXM	0.082860	0.024978	0.030874	-0.058494	-0.204307	-0.215564	0.088367
PWHITE	-0.207915	-0.087863	-0.185614	-0.007679	0.782028	0.899247	0.076243
PPROB	1.000000	0.177370	0.048348	-0.162371	-0.063008	-0.237271	0.056071

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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                 6TH GRADE - SET 1   59

CORRELATION MATRIX       SELECTED VARIABLE

                     PPROB        PNWENT        PHMWK        PHRTCH        TWHUND        TWHITE        THRTCH

PNWENT            0.177370      1.000000    -0.192577    -0.140199      0.127699    -0.096213      0.275014
PHMWK             0.048348     -0.192577     1.000000     0.155434     -0.226398    -0.152960     -0.168257
PHRTCH           -0.162371     -0.140199     0.155434     1.000000     -0.030153     0.002705     -0.148872
TWHUND           -0.063008      0.127699    -0.226398    -0.030153      1.000000     0.812112      0.145530
TWHITE           -0.237271     -0.096213    -0.152960     0.002705      0.812112     1.000000      0.079391
THRTCH            0.056071      0.275014    -0.168257    -0.148872      0.145530     0.079391      1.000000
TSIZE             0.021330      0.124763    -0.137856    -0.211592      0.217151     0.155594      0.060914
SBIRTH           -0.095795      0.011075    -0.118366    -0.091541      0.396915     0.409569      0.041884
SMTRBN           -0.184060     -0.057916    -0.115356    -0.036551      0.380378     0.472500     -0.001559
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                   6TH GRADE - SET 1    59

CORRELATION MATRIX       SELECTED VARIABLE

                       TSIZE           SBIRTH          SMTRBN

PNWENT              0.124763        0.011075       -0.057916
PHMWK              -0.137856       -0.118366       -0.115356
PHRTCH             -0.211592       -0.091541       -0.036551
TWHUND              0.217151        0.396915        0.380378
TWHITE              0.155594        0.409569        0.472500
THRTCH              0.060914        0.041884       -0.001559
TSIZE               1.000000        0.132558        0.129043
SBIRTH              0.132558        1.000000        0.532689
SMTRBN              0.129043        0.532689        1.000000
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                 6TH GRADE - SET 2   59

SELECTED VARIABLE

THE NUMBER OF OBSERVATIONS IS       54568.

VARIABLE         SUMS         SUMS OF SQUARES             MEAN           SIGMA(N)         SIGMA(N-1)
PLGRD        -14171.9987         49122.2051             -0.2597           0.9126            0.9126
PPTST          2163.3524         65823.7607              0.0396           1.0976            1.0976
PASGN           884.6818         54881.6069              0.0162           1.0027            1.0027
PDATTN         1376.1907         54313.1938              0.0252           0.9973            0.9974
PCRED         -2919.4529         52065.0518             -0.0535           0.9753            0.9753
TCRED        -15588.0231         17396.6548             -0.2857           0.4870            0.4870
TASGN        -20244.7681         29628.7139             -0.3710           0.6367            0.6367
TINST        -14085.0231          5887.5165             -0.2581           0.2031            0.2031
THONOR       -11068.6660          8977.0333             -0.2028           0.3512            0.3512
SFORPT        -9004.5148         17625.1604             -0.1650           0.5438            0.5438
SFORST        -6084.2293          9142.2863             -0.1115           0.3938            0.3938
SKGTN        -18336.7441         41957.8389             -0.3360           0.8099            0.8099
SNURSY       -12608.9178         27631.8618             -0.2311           0.6730            0.6730
PFNURS          829.6985         61913.3530              0.0152           1.0651            1.0651
PCOMPL         2888.9421         50072.1865              0.0529           0.9565            0.9565
PLNDAY        -5251.3287         55355.0752             -0.0962           1.0026            1.0026
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                        6TH GRADE - SET 2   59

CORRELATION MATRIX      SELECTED VARIABLE

                      SRACE        PFNURS        PCOMPL        PLNDAY         PLGRD         PPTST         PASGN

PPLNT              0.094662     -0.017454     -0.032913      0.129079      0.248757     -0.017838     -0.054543
PEXP              -0.125793      0.033918     -0.078456      0.002918     -0.005008      0.088052     -0.095812
PTRNG             -0.013331      0.078247      0.203651     -0.253955      0.049401     -0.050998      0.196676
PCOLAT             0.035257     -0.018633     -0.025243      0.024706      0.000369      0.039399      0.039563
PINSTF            -0.039383      0.037675      0.000889      0.136278      0.390955      0.006116     -0.071618
PSPST              0.035153      0.111376      0.307336     -0.224848      0.091547     -0.033386      0.191194
PTRCK             -0.090560      0.015738      0.005568      0.046263      0.105420      0.005205     -0.005595
PTSTG             -0.025512      0.012312      0.083863      0.063446      0.209520      0.020792     -0.021613
PTRNS             -0.066842      0.038193      0.068123     -0.095272     -0.100867     -0.012488      0.085375
PREMD             -0.102601      0.060701     -0.012043     -0.054097      0.074940     -0.020529      0.060802
PFLUN             -0.142760      0.069769     -0.119189      0.108153     -0.022895      0.098095     -0.144349
PACRD              0.193337      0.054673      0.310045     -0.045031      0.022438     -0.000857      0.059932
PAGTXT            -0.022682     -0.012791     -0.064188      0.055792     -0.012676      0.059882     -0.008996
PAVTXT             0.190971     -0.031160      0.038823     -0.013777     -0.024186     -0.066276      0.033325
PRURUB            -0.078493      0.139638      0.139293     -0.299923     -0.135888      0.003383      0.148973
PPTRAT            -0.093965     -0.031012     -0.103210     -0.120149     -0.076082     -0.027576      0.030464
PENRL             -0.142792      0.071101     -0.002332     -0.116192      0.140760      0.001337      0.061199
PPRSLR             0.034950      0.035413      0.033471     -0.057023     -0.101281      0.022137      0.025334
PAGBLD             0.034729      0.057954      0.059816     -0.043745     -0.030893     -0.007216     -0.001986
PPUPRM            -0.100953     -0.006741     -0.005353     -0.090590     -0.038329     -0.023931      0.057860
PSEX               0.021695      0.065961      0.054667     -0.084875     -0.183424      0.058770     -0.027363
PSREP              0.226029     -0.035706      0.105187     -0.037153     -0.008300     -0.056775      0.036482
TEXP              -0.013348     -0.028487     -0.138407      0.177543      0.038541      0.026243     -0.163603
TCOND              0.536631     -0.169215      0.144337     -0.052675     -0.014107     -0.039351      0.097113
TLOC               0.018916      0.011557      0.083401     -0.095250     -0.007371     -0.012057      0.113627
TSESB              0.215116      0.031709      0.189067     -0.205175     -0.071969     -0.050355      0.188587
TTRNG             -0.040107      0.082841      0.235508     -0.241923     -0.074688      0.001330      0.238582
TCOLAT             0.232063      0.047385      0.167183     -0.106891     -0.022967     -0.039951      0.168483
TRELAC            -0.272333      0.009433     -0.109464      0.096605     -0.003027      0.042653     -0.057777
TPRHAB             0.361615     -0.049615      0.165746     -0.044006      0.019469     -0.043092      0.119507
TSEX               0.025334     -0.004666     -0.099029      0.092738     -0.008963      0.025198     -0.029064
TRACE              0.854376     -0.063257      0.317413     -0.112788     -0.012463     -0.115597      0.185788
TSAL               0.047257      0.095524      0.334271     -0.358445     -0.116539     -0.028908      0.290378
TVOCAB             0.552909     -0.010539      0.344537     -0.201295     -0.056061     -0.078945      0.172114
SSES               0.672018     -0.108755      0.316230     -0.202703     -0.020366     -0.096049      0.218348
SFSS               0.663354     -0.114091      0.247761     -0.031073     -0.013534     -0.089510      0.113896
SEXPTN             0.456720     -0.125170      0.153896      0.007621     -0.012774     -0.075744      0.054071
SEDPLN             0.449139     -0.096559      0.231213     -0.102825     -0.033806     -0.066715      0.142344
SHBTS              0.465722     -0.083068      0.205803     -0.059606     -0.034600     -0.068166      0.088265
SATTUD             0.514249     -0.089704      0.215931     -0.054398     -0.041385     -0.060847      0.093194
SACHV              0.799000     -0.104137      0.341193     -0.140952     -0.001651     -0.109079      0.209655
SSEX               0.091072     -0.008804      0.043229     -0.019344      0.001503     -0.035069     -0.000529
SRACE              1.000000     -0.157786      0.268746     -0.058936      0.039725     -0.122654      0.158470
PFNURS            -0.157786      1.000000      0.058858     -0.025964     -0.019407      0.090005     -0.004027
PCOMPL             0.268746      0.058858      1.000000     -0.153611     -0.067434     -0.026358      0.174144
PLNDAY            -0.058936     -0.025964     -0.153611      1.000000      0.140306      0.099218     -0.179122
PLGRD              0.039725     -0.019407     -0.067434      0.140306      1.000000     -0.037589     -0.090087
PPTST             -0.122654      0.090005     -0.026358      0.099218     -0.037589      1.000000     -0.048115
PASGN              0.158470     -0.004027      0.174144     -0.179122     -0.090087     -0.048115      1.000000
PDATTN             0.355325     -0.061465      0.230533      0.011883     -0.023617     -0.085537      0.099367
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                     6TH GRADE - SET 1   59

CORRELATION MATRIX       SELECTED VARIABLE

                          TSIZE          SBIRTH          SMTRBN

PNWENT                 0.124763        0.011075       -0.057916
PHMWK                 -0.137856       -0.118366       -0.115356
PHRTCH                -0.211592       -0.091541       -0.036551
TWHUND                 0.217151        0.396915        0.380378
TWHITE                 0.155594        0.409569        0.472500
THRTCH                 0.060914        0.041884       -0.001559
TSIZE                  1.000000        0.132558        0.129043
SBIRTH                 0.132558        1.000000        0.532689
SMTRBN                 0.129043        0.532689        1.000000
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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                            6TH GRADE - SET 2   59

CORRELATION MATRIX      SELECTED VARIABLE

                        SRACE          PFNURS          PCOMPL          PLNDAY           PLGRD           PPTST           PASGN

PCRED              -0.101899        0.019349        0.045598       -0.146738       -0.021591        0.043178        0.001311
TCRED              -0.099603        0.019123        0.110355       -0.192507       -0.063933        0.022997        0.114746
TASGN               0.149165       -0.031425       -0.075717        0.194207        0.159804       -0.003626       -0.129811
TINST              -0.141753        0.010313       -0.009620       -0.021717       -0.005431        0.008803       -0.002961
THONOR              0.100070        0.007252        0.064513        0.030607        0.035434       -0.007482        0.017732
SFORPT              0.428601       -0.101547        0.065134        0.104122        0.011609       -0.025326       -0.005146
SFORST              0.477857       -0.145162        0.094695        0.041185       -0.003114       -0.067734        0.005047
SKGTN               0.311405       -0.011722        0.351577       -0.316042       -0.079748       -0.041603        0.262994
SNURSY              0.495071       -0.107866        0.211086       -0.017029       -0.027382       -0.046106        0.077549
```

FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE

CORRELATION MATRIX SELECTED VARIABLE

	PDATTN	PCRED	TCRED	TASGN	TINST	THONUR	SFORPT
PPLNT	0.014636	0.064214	0.062045	0.215882	-0.028813	0.087006	0.068901
PEXP	-0.060633	0.066230	0.026977	0.000536	0.008873	-0.000217	-0.033648
PTRNG	-0.074491	0.123204	0.190072	-0.186883	-0.020610	0.102789	-0.163949
PCOLAT	0.031707	0.028864	0.060817	0.056641	-0.036303	0.019545	-0.009019
PINSTF	-0.042205	0.119927	0.041847	0.179973	0.056796	0.059503	-0.035840
PSPST	-0.003765	0.152348	0.171601	-0.159667	0.018673	0.060511	-0.079067
PTRCK	-0.067957	-0.003928	0.030106	-0.028621	0.013224	0.024910	-0.068967
PTSTG	0.015927	0.071865	0.039613	0.141634	0.050439	0.002792	0.010213
PTRNS	-0.091102	0.125300	0.150777	-0.103740	-0.036124	0.109576	-0.129623
PREMD	-0.067747	0.048128	0.120713	-0.009749	0.043857	0.015743	-0.112481
PFLUN	-0.111442	-0.030983	-0.023791	0.192543	-0.008204	-0.022689	-0.074333
PACRD	0.097940	0.018359	-0.004696	-0.017595	-0.006879	0.089009	0.084409
PAGTXT	-0.075346	-0.023764	-0.000768	-0.061998	0.040616	-0.006285	-0.034290
PAVTXT	0.112182	-0.071006	0.094105	0.057439	-0.011890	-0.008695	0.096438
PRURUB	-0.075392	0.127316	0.149647	-0.353125	0.013042	0.101806	-0.131498
PPTRAT	-0.140162	0.067381	0.025197	-0.249000	-0.063748	0.043901	-0.071845
PENRL	-0.204126	0.178649	0.090442	-0.091709	0.005469	0.091391	-0.140082
PPRSLR	0.054604	0.041332	0.079836	0.038508	-0.034718	0.049778	-0.019385
PAGBLD	-0.009961	-0.023508	0.000083	-0.037276	0.039409	-0.010853	0.030906
PPUPRM	-0.062801	0.076710	0.051103	-0.094511	-0.013448	0.033429	-0.064099
PSEX	-0.016316	-0.078335	-0.036763	-0.094859	-0.004249	-0.061870	0.043991
PSREP	0.150443	0.015077	0.029814	-0.039136	-0.028005	0.108406	0.095958
TEXP	0.050753	-0.078126	0.007497	0.174800	0.059713	0.005855	0.063987
TCOND	0.325523	-0.039267	-0.011191	0.042539	-0.052622	0.118910	0.243380
TLOC	0.079305	0.088417	0.201542	0.016973	-0.048776	0.120158	-0.077903
TSESB	0.078028	0.169004	0.205905	-0.156180	-0.075573	0.138663	0.019443
TTRNG	0.008065	0.202393	0.312317	-0.175091	0.040083	0.190055	-0.147433
TCOLAT	0.109449	0.089158	0.121233	0.065325	-0.046424	0.151104	-0.024209
TRELAC	-0.047811	0.031453	0.129397	-0.074024	0.139771	0.076537	-0.102046
TPRHAB	0.145223	-0.004757	0.074514	-0.003707	-0.082818	0.134611	0.129341
TSEX	0.010991	-0.031819	-0.116870	0.045185	-0.035879	-0.057613	0.056837
TRACE	0.311240	-0.020685	-0.018896	0.177530	-0.158813	0.123875	0.322822
TSAL	0.032105	0.221095	0.370066	-0.154535	-0.010502	0.090065	-0.129205
TVOCAB	0.243768	0.073975	0.099489	0.055866	-0.139150	0.136819	0.202840
SSES	0.321460	0.027638	0.046417	-0.000630	-0.062972	0.155441	0.392587
SFSS	0.300674	-0.056902	-0.036660	0.144659	-0.066872	0.063600	0.603521
SEXPTN	0.246725	-0.032124	-0.056661	0.102068	-0.036688	0.079548	0.526400
SEDPLN	0.245123	0.000261	0.009041	0.028118	-0.002394	0.137309	0.422870
SHBTS	0.209468	-0.010520	-0.033633	0.027226	-0.030752	0.106611	0.559153
SATTUD	0.235451	-0.011062	-0.022659	0.037419	-0.074299	0.083711	0.577826
SACHV	0.358827	-0.041302	-0.005335	0.083531	-0.108351	0.138590	0.393536
SSEX	0.050239	-0.010585	-0.001855	-0.002173	-0.009314	0.043168	0.333612
SRACE	0.355325	-0.101899	-0.099603	0.149165	-0.141753	0.100070	0.428601
PFNURS	-0.061465	0.019349	0.019123	-0.031425	0.010313	0.007252	-0.101547
PCOMPL	0.230533	0.045598	0.110355	-0.075717	-0.009620	0.064513	0.065134
PLNDAY	0.011883	-0.146738	-0.192507	0.194207	-0.021717	0.030607	0.104122
PLGRD	-0.023617	-0.021591	-0.063933	0.159804	-0.005431	0.035434	0.011609
PPTST	-0.085537	0.043178	0.022997	-0.003626	0.008803	-0.007482	-0.025326
PASGN	0.099367	0.001311	0.114746	-0.129811	-0.002961	0.017732	-0.005146
PDATTN	1.000000	-0.046419	-0.015926	0.080802	-0.050823	0.057475	0.219278

```
FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                        6TH GRADE - SET 2    59

CORRELATION MATRIX      SELECTED VARIABLE

                     PDATTN          PCRED          TCRED          TASGN          TINST         THONOR         SFORPT

PCRED            -0.046419       1.000000       0.271819      -0.001996       0.065361       0.014956      -0.128885
TCRED            -0.015926       0.271819       1.000000      -0.029425       0.129699       0.029350      -0.125819
TASGN             0.080802      -0.001996      -0.029425       1.000000      -0.010534      -0.003961       0.103865
TINST            -0.050823       0.065361       0.129699      -0.010534       1.000000       0.017900      -0.025502
THONOR            0.057475       0.014956       0.029350      -0.003961       0.017900       1.000000       0.036827
SFORPT            0.219278      -0.128885      -0.125819       0.103865      -0.025502       0.036827       1.000000
SFORST            0.210710      -0.141297      -0.111643       0.058059      -0.029178       0.018604       0.6995[illegible]
SKGTN             0.141653       0.098921       0.169114      -0.106610      -0.024781       0.074030       0.228112
SNURSY            0.244857      -0.026883      -0.018727       0.108195      -0.033046       0.042179       0.5605[illegible]5
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CORRELATION MATRIX   SELECTED VARIABLE

	SFORST	SKGTN	SNURSY
PPLNT	0.035811	0.023942	0.046774
PEXP	-0.053214	-0.085232	-0.068980
PTRNG	-0.148990	0.368772	-0.038735
PCOLAT	0.001793	0.066873	-0.010791
PINSTF	-0.061548	-0.020619	-0.020517
PSPST	-0.079732	0.314087	0.004224
PTRCK	-0.071360	0.011120	-0.038754
PTSTG	0.016760	0.030759	0.027253
PTRNS	-0.144248	0.129992	-0.052787
PREMD	-0.096849	0.020806	-0.106593
PFLUN	-0.131477	-0.195827	-0.056133
PACRD	0.086732	0.209521	0.138996
PAGTXT	-0.033150	0.010463	0.006203
PAVTXT	0.111331	0.062675	0.133500
PRURUB	-0.116851	0.352910	-0.095645
PPTRAT	-0.076351	0.044580	-0.158154
PENRL	-0.149408	0.141862	-0.147351
PPRSLR	-0.031587	0.076071	0.022552
PAGBLD	0.027515	0.061852	0.066900
PPUPRM	-0.056035	0.042439	-0.066812
PSEX	0.036551	0.031856	0.018604
PSREP	0.092519	0.194407	0.134120
TEXP	0.064007	-0.241013	-0.010190
TCOND	0.271345	0.268392	0.267450
TLOC	-0.073757	0.131485	-0.003294
TSESB	-0.013003	0.356414	0.115129
TTRNG	-0.134595	0.384209	-0.035556
TCOLAT	-0.006231	0.286412	0.111827
TRELAC	-0.088848	-0.109872	-0.140211
TPRHAB	0.133202	0.268617	0.188923
TSEX	0.084864	-0.109567	-0.004680
TRACE	0.317907	0.362752	0.479035
TSAL	-0.114205	0.490188	0.047633
TVUCAB	0.176339	0.445072	0.351171
SSES	0.394141	0.559850	0.452532
SFSS	0.547810	0.441244	0.709774
SEXPTN	0.492273	0.451560	0.729243
SEDPLN	0.398079	0.573023	0.650738
SHBTS	0.480517	0.588772	0.771467
SATTUD	0.487431	0.560522	0.803197
SACHV	0.424443	0.490083	0.509584
SSEX	0.195227	0.218284	0.323232
SRACE	0.477857	0.311405	0.495071
PFNURS	-0.145162	-0.011722	-0.107866
PCOMPL	0.094695	0.351577	0.211086
PLNDAY	0.041185	-0.316042	-0.017029
PLGRD	-0.003114	-0.079748	-0.027382
PPTST	-0.067734	-0.041603	-0.046106
PASGN	0.005047	0.262994	0.077549
PDATTN	0.210710	0.141653	0.244857

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FACTOR ANALYSIS - MERGED DATA
SIXTH GRADE                                                      6TH GRADE - SET 2   59

CORRELATION MATRIX      SELECTED VARIABLE

                          SFORST         SKGTN          SNURSY

PCRED                  -0.141297      0.098921      -0.026883
TCRED                  -0.111643      0.169114      -0.018727
TASGN                   0.058059     -0.106610       0.108195
TINST                  -0.029178     -0.024781      -0.033046
THONOR                  0.018604      0.074030       0.042179
SFORPT                  0.699500      0.228112       0.560505
SFORST                  1.000000      0.168020       0.475532
SKGTN                   0.168020      1.000000       0.531519
SNURSY                  0.475532      0.531519       1.000000
```

Third Grade School, Teacher Aggregate and Student Aggregate Intercorrelations

The first 43 variables in the following list emphasize the basic set.

NO.	ACRONYM	TITLE
1	PPLNT	Physical Plant and Facilities
2	PEXP	Principal's Experience
3	PTRNG	Principal's Training
4	PCOLAT	Principal's College Attended
5	PINSTF	Principal's Instructional Facilities
6	PSPST	Specialized Staff and Services
7	PTRCK	Tracking
8	PTSTG	Testing
9	PTRNS	Transfers
10	PREMD	Remedial Programs
11	PFLUN	Free Milk and Lunch Programs
12	PACRD	Accreditation
13	PAGTXT	Age of Texts
14	PAVTXT	Availability of Texts
15	PRURUB	Rural-Urban Location of School
16	PPTRAT	Pupil-Teacher Ratio
17	PENRL	Number of Students Enrolled
18	PPRSLR	Promotion of Policy
19	PAGBLD	Age of Building
20	PPUPRM	Pupils Per Room
21	PSEX	Principal's Sex

NO.	ACRONYM	TITLE
22	PSREP	Principal's Estimate of Schools' Reputation
23	TEXP	Teacher's Experience
24	TCOND	Teaching Conditions
25	TLOC	Teacher's Localism of Background
26	TSESB	Teacher's Socio-Economic Background
27	TTRNG	Teacher's Training
28	TCOLAT	Teacher's College Attended
29	TRELAC	Teaching Related Activities
30	TPRHAB	Teacher's Preference for Student Ability Level
31	TSEX	Teacher's Sex
32	TRACE	Teacher's Racial - Ethnic Group Membership
33	TSAL	Teacher's Annual Teaching Salary
34	TVOCAB	Teacher's Vocabulary Score
35	SSES	Student's Socio-Economic Status
36	SFSS	Student's Family Structure and Stability
37	SEXPTN	Student's Expertations for Excellence
38	SHBTS	Student's Study Habits
39	SEDPLN	Student's Educational Plans
40	SAFTLD	Student's Attutude Toward Life
41	SACHV	Student's Achievement
42	SSEX	Student's Sex
43	SRACE	Student's Racial-Ethnic Group Membership
44	PSES	Principal's Estimate of Student Body's SES

NO.	ACRONYM	TITLE
45	PPTA	Principal's Estimate of PTA Attendance
46	PTURN	Teacher Turnover
47	PTENR	Teacher Tenure
48	PTEXM	Teacher Examinations
49	PWHITE	Principal's Estimate of Percent White of Student Body
50	PPROB	Principal's Estimate of School Problems
51	PNWENT	Length of Time Since Non-Whites Entered
52	PHMWK	Hours of Homework Expected
53	PHRTCH	Principal's Hours a Day Spent in Classroom Teaching
54	TWAUND	Percent White of Students at Teacher's Undergraduate Institutions
55	TWHITE	Percent White of Students in Teacher's Class
56	THRTCH	Teacher's Hours a Day Spent in Classroom Teaching
57	TSIZE	Average Class Size
58	SKGTN	Student's Kindergarten Attendance
59	SNURSY	Student's Nursery School Attendance
SET 2		
44	PENURS	Free Nursery
45	PCOMPL	Compulsory Attendance Law
46	PLNDAY	Length of School Day
47	PLGRD	Courses from Different Teachers
48	PPTST	Percent of Students in Part Time Attendance

NO.	ACRONYM	TITLE
49	PASGN	Pupil Assignment
50	PDATTN	Percent Daily Attendance
51	PCRED	Principal's Credits Beyond Highest Degree
52	TCRED	Teacher's Credits Beyond Highest Degree
53	TASGN	Teacher's Assignment to Present School
54	TINST	Teacher Attends Summer Institutes
55	THONOR	Teacher Member National Honorary
56	SNOHM	Number of Older Siblings Livings at Home
57	SFORPT	Student's Parents Speaks a Foreign Language
58	SFORST	Student Speaks a Foreign Language Outside of School
59	SBIRTH	Area of Student's Birth

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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                         3RD GRADE - SET 1   59

SELECTED VARIABLE


THE NUMBER OF OBSERVATIONS IS       56834.

VARIABLE        SUMS       SUMS OF SQUARES          MEAN           SIGMA(N)          SIGMA(N-1)
PPLNT        -19542.0566       448880.3633            -0.3438             2.7892             2.7893
PEXP           1596.4986       263095.5508             0.0281             2.1514             2.1514
PTRNG         -7729.7568       111978.9375            -0.1360             1.3971             1.3971
PCOLAT         -914.4640        97833.0635            -0.0161             1.3119             1.3119
PINSTF      -134856.0195       859336.4922            -2.3728             3.0806             3.0806
PSPST        -46308.2690       426752.2852            -0.8148             2.6163             2.6163
PTRCK        -15069.2992       391216.3398            -0.2651             2.6102             2.6102
PTSTG          7014.7909        88407.5293             0.1234             1.2411             1.2411
PTRNS          9682.8306       167410.9180             0.1704             1.7078             1.7078
PREMD        -16459.8545       110089.3203            -0.2896             1.3613             1.3613
PFLUN          3981.6963       144855.2949             0.0701             1.5949             1.5950
PACRD          1304.1622       136839.8535             0.0229             1.5515             1.5515
PAGTXT         1888.0391        74202.1045             0.0332             1.1421             1.1422
PAVTXT        -3739.1721        62963.4023            -0.0658             1.0505             1.0505
PRURUB          470.3583        59720.7642             0.0083             1.0250             1.0251
PPTRAT        13152.2272        53735.2144             0.2314             0.9444             0.9444
PENRL        -12565.3558        30789.2605            -0.2211             0.7020             0.7020
PPRSLR        -3583.3965        55862.8306            -0.0631             0.9894             0.9894
PAGBLD          221.0250        57485.6353             0.0039             1.0057             1.0057
PPUPRM         1163.0040        14536.1587             0.0205             0.5053             0.5053
PSEX           7976.2844        68503.8896             0.1403             1.0889             1.0889
PSREP         -2875.9106        60004.0239            -0.0506             1.0263             1.0263
TEXP          47062.2065       179601.5371             0.8281             1.5730             1.5730
TCOND         21245.5303       233144.1035             0.3738             1.9906             1.9906
TLOC         -19775.4131       108000.4609            -0.3480             1.3339             1.3339
TSESB        -29292.5420        78867.3516            -0.5154             1.0593             1.0593
TTRNG        -49045.9956       118853.9619            -0.8630             1.1604             1.1604
TCOLAT       -56884.1802       120842.6807            -1.0009             1.0604             1.0604
TRELAC        -7565.7307        22135.0469            -0.1331             0.6097             0.6097
TPRHAB       -27377.7625        31449.6714            -0.4817             0.5668             0.5668
TSEX          48672.2227        45885.3496             0.8564             0.2719             0.2719
TRACE          7385.0350        71892.3516             0.1299             1.1172             1.1172
TSAL         -23869.7922        37019.9971            -0.4200             0.6892             0.6892
TVOCAB       -13809.3412        33900.9194            -0.2430             0.7331             0.7331
SSES         -10310.9240       126267.7695            -0.1814             1.4795             1.4795
SFSS         -13453.6224        57956.2021            -0.2367             0.9817             0.9817
SEXPTN       -19841.0413        56096.5181            -0.3491             0.9301             0.9301
SHBTS        -11560.7659        28671.5781            -0.2034             0.6805             0.6805
SEDPLN        -4899.9941         8259.9476            -0.0862             0.3714             0.3714
SATTUC        -7908.7742        11240.0381            -0.1392             0.4224             0.4224
SACHV         -1604.9675       119598.9297            -0.0282             1.4504             1.4504
SSEX          -5492.7729         8563.9966            -0.0966             0.3760             0.3760
SRACE           931.7191        33789.1709             0.0164             0.7709             0.7709
PSES          -2126.5392        57623.9917            -0.0374             1.0062             1.0062
PPTA           8656.4680        63468.9810             0.1523             1.0457             1.0457
PTURN          -762.9080        57559.8125            -0.0134             1.0063             1.0063
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                   3RD GRADE - SET 1   59

SELECTED VARIABLE

THE NUMBER OF OBSERVATIONS IS      56834.

VARIABLE         SUMS       SUMS OF SQUARES            MEAN              SIGMA(N)          SIGMA(N-1)
PTENR        1133.2533          55948.3311           0.0199                0.9920              0.9920
PTEXM        -988.2256          54041.4287          -0.0174                0.9750              0.9750
PWHITE      -2613.6564          60256.7729          -0.0460                1.0286              1.0287
PPROB       -6019.5285          55491.7725          -0.1059                0.9824              0.9824
PNWENT      -2519.4707          49595.4795          -0.0443                0.9331              0.9331
PHMWK      -18191.5657          48880.2349          -0.3201                0.8704              0.8704
PHRTCH       5070.1968          61899.9595           0.0892                1.0398              1.0398
TWHUND      -4953.3496          56576.6255          -0.0872                0.9939              0.9939
TWHITE      -1092.8461          53100.9961          -0.0192                0.9664              0.9664
THRTCH     -75665.7803         102363.3066          -1.3313                0.1691              0.1691
TSIZE        -409.2088          17913.9612          -0.0072                0.5614              0.5614
SKGTN      -15855.3944          38815.9004          -0.2790                0.7779              0.7779
SNURSY     -33204.9604          37880.3037          -0.5842                0.5702              0.5702
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                 3RD GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE
                  PPLNT          PEXP         PTRNG        PCOLAT        PINSTF         PSPST         PTRCK

PPLNT          1.000000      0.010045      0.252140      0.044853      0.352205      0.277945      0.049997
PEXP           0.010045      1.000000      0.010406     -0.055098     -0.003711     -0.033174      0.060404
PTRNG          0.252140      0.010406      1.000000      0.106379      0.173577      0.533591      0.092326
PCOLAT         0.044853     -0.055098      0.106379      1.000000      0.041588      0.054919      0.019167
PINSTF         0.352205     -0.003711      0.173577      0.041588      1.000000      0.195928      0.046304
PSPST          0.277945     -0.033174      0.533591      0.054919      0.195928      1.000000      0.111834
PTRCK          0.049997      0.060404      0.092326      0.019167      0.046304      0.111834      1.000000
PTSTG          0.164966      0.048227      0.012090      0.023223      0.357681      0.114511      0.098078
PTRNS          0.046818     -0.023107      0.294225      0.098249     -0.000269      0.196919      0.034818
PREMD          0.070529     -0.033488      0.180679      0.042709      0.119750      0.175251      0.202446
PFLUN          0.059708      0.042919     -0.189382      0.012302      0.101284     -0.172783      0.023649
PACRD          0.026241     -0.081125      0.122996      0.049012      0.076328      0.212582      0.004391
PAGTXT        -0.098066      0.113413     -0.070307      0.000619     -0.024706     -0.070441     -0.015811
PAVTXT        -0.016783     -0.032951     -0.079653     -0.001208     -0.023334     -0.002013     -0.059331
PRURUB        -0.024364      0.017613      0.474369      0.026154     -0.048466      0.373971      0.056485
PPTRAT        -0.065596      0.061287      0.116283     -0.022307     -0.167931      0.037251      0.001917
PENRL          0.331639      0.099805      0.482951      0.050504      0.276243      0.504388      0.134033
PPRSLR         0.059150      0.053911      0.091414      0.014768     -0.014915      0.018627      0.005181
PAGBLD        -0.338910      0.012618     -0.088324     -0.065060      0.000459     -0.057871     -0.076748
PPUPRM        -0.023863      0.078212      0.191788     -0.012066     -0.100297      0.164185      0.040184
PSEX          -0.266307      0.183980     -0.225805     -0.068781     -0.184073     -0.128994     -0.016673
PSREP          0.199183      0.122793      0.153864      0.018477      0.021374      0.182082      0.102398
TEXP          -0.020817      0.217946     -0.220057     -0.083490      0.031251     -0.262809     -0.029403
TCOND          0.163061      0.010939      0.061149     -0.030138     -0.018241      0.079194     -0.019292
TLOC           0.105377     -0.139922      0.185681      0.179834      0.039845      0.112552      0.035463
TSESB          0.109542     -0.077850      0.390670      0.126848     -0.018348      0.361295      0.008001
TTRNG          0.114309      0.088552      0.583847      0.046348      0.029764      0.474163      0.029167
TCOLAT         0.121407     -0.096712      0.295012      0.269137      0.070857      0.222867     -0.034113
TRELAC         0.013348      0.038838     -0.002701     -0.050951     -0.024360     -0.061033      0.027980
TPRHAB         0.129120     -0.067918      0.211062      0.007370      0.039738      0.163075      0.011019
TSEX          -0.013129      0.058066     -0.203082      0.017306     -0.056220     -0.185315     -0.008044
TRACE          0.077993     -0.173409      0.070219      0.073355     -0.016477      0.126153     -0.108959
TSAL           0.086269     -0.002125      0.629680      0.098242      0.035238      0.550528      0.019596
TVOCAB         0.075281     -0.109316      0.229162      0.061700     -0.004890      0.274151     -0.065304
SSES           0.189519     -0.079445      0.194175      0.006393      0.000178      0.288107     -0.026468
SFSS           0.084387     -0.091682     -0.043514      0.007631     -0.022953      0.076581     -0.106820
SEXPTN         0.091518      0.008014      0.047170     -0.000030      0.023258      0.075247     -0.066802
SHBTS          0.122066     -0.059043      0.159153      0.012753      0.020074      0.227970     -0.063062
SEDPLN         0.064262     -0.024674      0.069679     -0.017470      0.021294      0.104046     -0.057163
SATTUD        -0.009437      0.068760     -0.092796     -0.024036     -0.047242     -0.036184     -0.072945
SACHV          0.115105     -0.092815      0.094604      0.022507     -0.001857      0.200010     -0.045280
SSEX          -0.025849     -0.007619     -0.036397     -0.028237      0.009705      0.035646     -0.053243
SRACE          0.102791     -0.136576     -0.015472      0.013309     -0.039604      0.058900     -0.102490
PSES           0.154161      0.029303      0.325114      0.013137     -0.047574      0.360172      0.073370
PPTA           0.058539      0.068919      0.030626     -0.008801     -0.041414      0.018122      0.073328
PTURN         -0.007558     -0.189037     -0.039239      0.049135      0.040322     -0.056489     -0.027358
PTENR         -0.073189      0.010620      0.305185      0.012351     -0.016189      0.239419      0.013215
PTEXM         -0.018105      0.080807      0.062936      0.010201     -0.029609      0.020471      0.115162
PWHITE         0.075535     -0.152835     -0.011214      0.031260     -0.058213      0.063147     -0.096999
PPROB          0.047869     -0.007426      0.181393      0.039422      0.160701      0.103189      0.037313
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                           3RD GRADE - SET 1    59

CORRELATION MATRIX      SELECTED VARIABLE

                      PPLNT          PEXP          PTRNG          PCOLAT         PINSTF         PSPST          PTRCK

PNWENT            -0.054684      0.002593       0.270199       0.051609       0.008273       0.232409      -0.021353
PHMWK              0.133134      0.041948      -0.171430      -0.018775       0.336095      -0.165300       0.073567
PHRTCH            -0.320350     -0.030284      -0.592056      -0.055604      -0.166845      -0.422205      -0.096886
TWHUND             0.057343     -0.163425       0.052726       0.067009      -0.023399       0.105615      -0.105239
TWHITE             0.075995     -0.141730      -0.029947       0.019418      -0.054404       0.049255      -0.098725
THRTCH            -0.118986     -0.065211       0.272292       0.045244      -0.011786       0.290990       0.029587
TSIZE              0.078501     -0.023634       0.276089      -0.007701      -0.028185       0.212558      -0.032415
SKGTN              0.040638     -0.092508       0.464504       0.055285      -0.008100       0.468824      -0.001559
SNURSY             0.022501     -0.002014       0.060376      -0.008100       0.034225       0.089364      -0.017678
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                     3RD GRADE - SET 1    59

CORRELATION MATRIX       SELECTED VARIABLE

                    PTSTG          PTRNS          PREMD          PFLUN          PACRD          PAGTXT         PAVTXT

PPLNT            0.164966       0.046818       0.070529       0.059708       0.026241      -0.098066      -0.016783
PEXP             0.048227      -0.023107      -0.033488       0.042919      -0.081125       0.113413      -0.032951
PTRNG            0.012090       0.294225       0.180679      -0.189382       0.122996      -0.070307      -0.079653
PCOLAT           0.023223       0.098249       0.042709       0.012302       0.049012       0.000619      -0.001208
PINSTF           0.357681      -0.000269       0.119750       0.101284       0.076328      -0.024706      -0.023334
PSPST            0.114511       0.196919       0.175251      -0.172783       0.212582      -0.070441      -0.002013
PTRCK            0.098078       0.034818       0.202446       0.023649       0.004391      -0.015811      -0.059331
PTSTG            1.000000      -0.050155       0.097836       0.071679       0.126209      -0.035175      -0.037664
PTRNS           -0.050155       1.000000       0.093733      -0.038468       0.090029       0.028407      -0.090438
PREMD            0.097836       0.093733       1.000000       0.021894       0.076410      -0.047620      -0.076287
PFLUN            0.071679      -0.038468       0.021894       1.000000      -0.025300      -0.022861      -0.005074
PACRD            0.126209       0.090029       0.076410      -0.025300       1.000000      -0.049940       0.116614
PAGTXT          -0.035175       0.028407      -0.047620      -0.022861      -0.049940       1.000000      -0.096556
PAVTXT          -0.037664      -0.090438      -0.076287      -0.005074       0.116614      -0.096556       1.000000
PRURUB          -0.050181       0.290709       0.076313      -0.214194       0.124613       0.012700      -0.080297
PPTRAT          -0.123206       0.377459       0.001229      -0.165696      -0.141493       0.006119      -0.108565
PENRL            0.074190       0.269859       0.088827      -0.083181       0.034893      -0.038161      -0.113419
PPRSLR          -0.022272       0.080153       0.047990      -0.008852      -0.059884       0.013477      -0.038164
PAGBLD          -0.031763      -0.049116      -0.041079       0.019574       0.036388       0.029575       0.019367
PPUPRM          -0.073737       0.073903       0.002979      -0.135800      -0.045097      -0.034750      -0.072147
PSEX            -0.068161      -0.018606      -0.065471      -0.018522       0.073658       0.109244       0.014830
PSREP            0.014001       0.032381       0.018321      -0.061754       0.092278      -0.072299       0.025803
TEXP            -0.010497      -0.188974      -0.055650       0.096271      -0.100081       0.037785       0.050585
TCOND            0.017245      -0.127032      -0.106371      -0.180823       0.067728      -0.028479       0.084119
TLUC            -0.001261       0.249425       0.086481      -0.003630       0.072136      -0.053844       0.003871
TSESB            0.003194       0.242469       0.061779      -0.211703       0.140295      -0.051967      -0.038923
TTRNG            0.005980       0.204158       0.119464      -0.193089       0.127174       0.001403      -0.091393
TCOLAT           0.036539       0.197555       0.057814      -0.034142       0.151918      -0.060817       0.049707
TRELAC          -0.003191      -0.001924       0.009354       0.019030      -0.115288       0.022573      -0.067910
TPRHAB          -0.022618       0.078181       0.001434      -0.102625       0.089479      -0.016834       0.020182
TSEX             0.013740      -0.069771      -0.071710       0.029630      -0.078964       0.034945       0.003831
TRACE           -0.042582       0.091206      -0.005879      -0.044317       0.275923      -0.049284       0.150476
TSAL            -0.015096       0.278427       0.130602      -0.158876       0.235018      -0.057348      -0.050254
TVOCAB           0.003613       0.165016       0.000131      -0.071688       0.278151      -0.055033       0.116008
SSES             0.022735       0.029968      -0.026432      -0.220289       0.206203      -0.047535       0.117568
SFSS            -0.003850      -0.074289      -0.092840      -0.068543       0.170815      -0.024406       0.142792
SEXPTN           0.026071       0.026891      -0.063137      -0.099975       0.055895      -0.002067       0.058148
SHBTS            0.046433       0.051335      -0.038328      -0.164857       0.245931      -0.040888       0.125053
SEDPLN          -0.006287      -0.027518      -0.064045      -0.102075       0.112940      -0.061288       0.085377
SATTUD           0.009458      -0.081089      -0.088284      -0.102377       0.034250       0.020482       0.092402
SACHV            0.016971      -0.029836      -0.087451      -0.155084       0.192674      -0.044795       0.140499
SSEX             0.005081       0.017272      -0.043127      -0.016877       0.030808       0.010062       0.038249
SRACE           -0.041966      -0.055165      -0.079457      -0.122393       0.212802      -0.039720       0.163251
PSES             0.001871       0.116201      -0.009025      -0.236739       0.147789      -0.018107       0.020064
PPTA             0.040465      -0.021335      -0.002250      -0.046385      -0.026040      -0.068056       0.043345
PTURN           -0.048376       0.128034      -0.041979       0.011549       0.020620       0.051278       0.036216
PTENR           -0.041172       0.083493       0.047295      -0.086582       0.179206       0.008516      -0.031913
PTEXM           -0.046563       0.054238       0.030219       0.077764      -0.203007       0.000542      -0.043625
PWHITE          -0.048104      -0.017737      -0.084506      -0.162006       0.217681      -0.034773       0.137238
PPROB            0.012951       0.183835       0.134081       0.075725      -0.001539       0.007627      -0.158221
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                       3RD GRADE - SET 1    59

CORRELATION MATRIX       SELECTED VARIABLE

                     PTSTG          PTRNS          PREMD          PFLUN          PACRD         PAGTXT         PAVTXT

PNWENT           -0.024929       0.247891       0.112091      -0.026722       0.110725       0.037496      -0.034445
PHMWK             0.217537      -0.134468       0.033067       0.108823      -0.139318      -0.004532      -0.038572
PHRTCH           -0.000224      -0.224118      -0.075245       0.130532      -0.061745       0.051305       0.069676
TWHUND           -0.033312       0.077422       0.002734      -0.018683       0.272846      -0.057450       0.159413
TWHITE           -0.041075      -0.044096      -0.087680      -0.151736       0.216105      -0.026123       0.163841
THRTCH           -0.002091       0.121725       0.032743      -0.179086       0.113806       0.001656       0.008774
TSIZE             0.002760       0.134831       0.005574      -0.122927       0.139917      -0.023463       0.044111
SKGTN             0.003214       0.168622       0.040881      -0.224851       0.159493      -0.068992       0.030933
SNURSY            0.013954       0.025899       0.009350      -0.046587       0.043910      -0.015285       0.030056
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                      3RD GRADE - SET 1    59

CORRELATION MATRIX       SELECTED VARIABLE

                    PRURUB        PPTRAT         PENRL        PPRSLR        PAGBLD        PPUPRM          PSEX

PPLNT            -0.024364     -0.065596      0.331639      0.059150     -0.338910     -0.023863     -0.266307
PEXP              0.017613      0.061287      0.099805      0.053911      0.012618      0.078212      0.183980
PTRNG             0.474369      0.116283      0.482951      0.091414     -0.088324      0.191788     -0.225805
PCOLAT            0.026154     -0.022307      0.050504      0.014768     -0.066060     -0.012066     -0.068781
PINSTF           -0.048466     -0.167931      0.276243     -0.014915      0.000459     -0.100297     -0.184073
PSPST             0.373971      0.037251      0.504388      0.018627     -0.057871      0.164185     -0.128994
PTRCK             0.056485      0.001917      0.134033      0.005181     -0.076748      0.040184     -0.016673
PTSTG            -0.050181     -0.123206      0.074190     -0.022272     -0.031763     -0.073737     -0.068161
PTRNS             0.290709      0.077459      0.269859      0.080153     -0.049116      0.073903     -0.018606
PREMD             0.076313      0.001229      0.088827      0.047990     -0.041079      0.002979     -0.065471
PFLUN            -0.214194     -0.165696     -0.083181     -0.008852      0.019574     -0.135800     -0.018522
PACRD             0.124613     -0.141493      0.034893     -0.059884      0.036388     -0.045097      0.073658
PAGTXT            0.012700      0.006119     -0.038161      0.013477      0.029575     -0.034750      0.109244
PAVTXT           -0.080297     -0.108565     -0.113419     -0.038164      0.019367     -0.072147      0.014830
PRURUB            1.000000      0.243732      0.393399      0.057438      0.083623      0.218609      0.025496
PPTRAT            0.243732      1.000000      0.298207      0.029863     -0.051367      0.653269      0.008062
PENRL             0.393399      0.298207      1.000000      0.057987     -0.151684      0.391288     -0.159370
PPRSLR            0.057438      0.029863      0.057987      1.000000     -0.026462     -0.002568      0.010667
PAGBLD            0.083623     -0.051367     -0.151684     -0.026462      1.000000     -0.092760      0.137782
PPUPRM            0.218609      0.653269      0.391288     -0.002568     -0.092760      1.000000     -0.033092
PSEX              0.025496      0.008062     -0.159370      0.010667      0.137782     -0.033092      1.000000
PSREP             0.138345      0.024752      0.116503      0.001526     -0.150431      0.049015      0.027934
TEXP             -0.186312     -0.077004     -0.173853     -0.017819      0.205474     -0.121122      0.036380
TCOND             0.002146     -0.020275     -0.049923     -0.033759     -0.142194     -0.028556      0.031549
TLOC              0.025040     -0.050778      0.029946      0.115974     -0.191968     -0.021809     -0.072832
TSESB             0.368173      0.117279      0.228093      0.067866     -0.067432      0.146387     -0.070655
TTRNG             0.431562      0.112727      0.272592      0.052423     -0.001005      0.175231     -0.088823
TCOLAT            0.160612     -0.017497      0.147595      0.111993     -0.093615      0.024884     -0.085279
TRELAC           -0.040646      0.054614     -0.002346      0.005944     -0.069637      0.054040      0.015234
TPRHAB            0.151575      0.092499      0.120533      0.021722      0.007650      0.077108      0.014189
TSEX             -0.065392     -0.037308     -0.076092     -0.030541      0.040634     -0.050595      0.140488
TRACE             0.009163     -0.096614     -0.071004      0.080299      0.070765     -0.109927     -0.010352
TSAL              0.434152      0.065663      0.264237      0.093780      0.018833      0.136837     -0.044721
TVOCAB            0.172562     -0.094995      0.053741      0.069139      0.039877     -0.039016     -0.014522
SSES              0.152585     -0.036861      0.066756      0.019839     -0.056250      0.006509      0.012261
SFSS             -0.079686     -0.107952     -0.087733      0.003125      0.017074     -0.107223     -0.018210
SEXPTN            0.010734     -0.008393      0.023410      0.040734     -0.011538     -0.003080     -0.025556
SHBTS             0.171366     -0.009273      0.080756      0.032222      0.036375      0.009904      0.009346
SEDPLN            0.009327      0.008935      0.014506      0.014412      0.012775      0.037484     -0.033337
SATTUD           -0.077858     -0.066713     -0.096460      0.040205      0.067049     -0.076990      0.016976
SACHV             0.068932     -0.109511     -0.034769      0.012149     -0.001724     -0.076182      0.012394
SSEX              0.007428     -0.037890     -0.025049      0.013746      0.047734     -0.033348      0.016694
SRACE            -0.068849     -0.087321     -0.135625      0.043663      0.038755     -0.092410      0.013520
PSES              0.373374      0.186686      0.283777     -0.026684     -0.102943      0.204404     -0.068930
PPTA              0.036900     -0.020587     -0.030670      0.009921     -0.071203     -0.023312      0.090980
PTURN            -0.067256     -0.075586     -0.067301      0.009228     -0.069564     -0.082555     -0.033324
PTENR             0.189169      0.092189      0.095812      0.006266      0.097442      0.134550      0.040602
PTEXM             0.213032      0.099756      0.158792     -0.015591      0.061252      0.080665      0.010935
PWHITE           -0.047088     -0.082014     -0.133752      0.070856      0.031586     -0.100756      0.023513
PPROB             0.154431      0.023848      0.207760      0.042826      0.013376      0.050255     -0.059764
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                           3RD GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE

                    PRURUB       PPTRAT        PENRL       PPRSLR       PAGBLD       PPUPRM         PSEX

PNWENT            0.199820     0.005713     0.148339     0.057789     0.122385     0.018453    -0.063443
PHMWK            -0.299802    -0.070675     0.025355    -0.063620    -0.036054    -0.064366    -0.162713
PHRTCH           -0.429220    -0.165386    -0.525605    -0.074541     0.129239    -0.223702     0.219917
TWHUND            0.013448    -0.093838    -0.079591     0.069496     0.097506    -0.108020     0.006152
TWHITE           -0.058698    -0.058951    -0.139774     0.034965     0.031552    -0.083480     0.013529
THRTCH            0.244168     0.057555     0.125645     0.034442     0.084169     0.078958     0.042765
TSIZE             0.156643    -0.007774     0.114141     0.021685    -0.105288     0.036314    -0.075835
SKGTN             0.430115     0.135753     0.230460     0.065574     0.023344     0.175753    -0.035306
SNURSY            0.032537    -0.087299    -0.023035     0.040205     0.048470    -0.082766     0.026034
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                     3RD GRADE - SET 1    59

CORRELATION MATRIX       SELECTED VARIABLE

                      PSREP          TEXP         TCOND          TLOC         TSESB         TTRNG        TCOLAT

PPLNT              0.199183     -0.020817      0.163061      0.105377      0.109542      0.114309      0.121407
PEXP               0.122793      0.217946      0.010939     -0.139922     -0.077850      0.088552     -0.096712
PTRNG              0.153864     -0.220057      0.061149      0.185681      0.390670      0.583847      0.295012
PCOLAT             0.018477     -0.083490     -0.030138      0.179834      0.126848      0.046348      0.269137
PINSTF             0.021374      0.031251     -0.018241      0.039845     -0.018348      0.029764      0.070857
PSPST              0.182082     -0.262809      0.079194      0.112552      0.361295      0.474163      0.222867
PTRCK              0.102398     -0.029403     -0.019292      0.035463      0.008001      0.029167     -0.034113
PTSTG              0.014001     -0.010497      0.017245     -0.001261      0.003194      0.005980      0.036539
PTRNS              0.032381     -0.188974     -0.127032      0.249425      0.242469      0.204158      0.197555
PREMD              0.018321     -0.055650     -0.106371      0.086481      0.061779      0.119464      0.057814
PFLUN             -0.061754      0.096271     -0.180823     -0.003630     -0.211703     -0.193089     -0.034142
PACRD              0.092278     -0.100081      0.067728      0.072136      0.140295      0.127174      0.151918
PAGTXT            -0.072299      0.037785     -0.028479     -0.053844     -0.051967      0.001403     -0.060817
PAVTXT             0.025803      0.050585      0.084119      0.003871     -0.038923     -0.091393      0.049707
PRURUB             0.138345     -0.186312      0.002146      0.025040      0.368173      0.431562      0.160612
PPTRAT             0.024752     -0.077004     -0.020275     -0.050778      0.117279      0.112727     -0.017497
PENRL              0.116503     -0.173853     -0.049923      0.029946      0.228093      0.272592      0.147595
PPRSLR             0.001526     -0.017819     -0.033759      0.115974      0.067866      0.052423      0.111993
PAGBLD            -0.150431      0.205474     -0.142194     -0.191968     -0.067432     -0.001005     -0.093615
PPUPRM             0.049015     -0.121122     -0.028556     -0.021809      0.146387      0.175231      0.024884
PSEX               0.027934      0.036380      0.031549     -0.072832     -0.070655     -0.088823     -0.085279
PSREP              1.000000     -0.002802      0.367690      0.027717      0.166720      0.182910      0.089490
TEXP              -0.002802      1.000000      0.008599     -0.331901     -0.452294      0.008130     -0.246454
TCOND              0.367690      0.008599      1.000000     -0.014370      0.148248      0.100279      0.123512
TLOC               0.027717     -0.331901     -0.014370      1.000000      0.236659      0.120132      0.260750
TSESB              0.166720     -0.452294      0.148248      0.236659      1.000000      0.300384      0.350643
TTRNG              0.182910      0.008130      0.100279      0.120132      0.300384      1.000000      0.230800
TCOLAT             0.089490     -0.246454      0.123512      0.260750      0.350643      0.230800      1.000000
TRELAC             0.024274      0.080527     -0.059197      0.023146     -0.068579      0.038427     -0.113475
TPRHAB             0.204745     -0.104578      0.305478      0.065786      0.302847      0.186469      0.206621
TSEX              -0.005396      0.172685      0.040291     -0.166946     -0.038730     -0.174197     -0.018268
TRACE              0.142335     -0.048790      0.339379      0.106335      0.321379      0.016591      0.350875
TSAL               0.175072     -0.116205      0.089979      0.247680      0.366187      0.812546      0.326640
TVOCAB             0.136870     -0.135708      0.270096      0.180829      0.393100      0.248079      0.382069
SSES               0.295639     -0.148341      0.644303      0.101081      0.347303      0.201419      0.246282
SFSS               0.119270     -0.008204      0.354090      0.007838      0.094712     -0.015427      0.144783
SEXPTN             0.058400     -0.023244      0.149828      0.050933      0.046445      0.048889      0.085468
SHBTS              0.187359     -0.087528      0.394551      0.077695      0.241417      0.176751      0.212988
SEDPLN             0.148769     -0.010169      0.282786     -0.011069      0.082269      0.071707      0.089303
SATTUD             0.015235      0.113283      0.153885     -0.098255     -0.059666     -0.047928     -0.041863
SACHV              0.247752     -0.042878      0.546655      0.079607      0.196497      0.128759      0.193049
SSEX              -0.009824      0.003696      0.063258     -0.009336     -0.011722      0.010176      0.001021
SRACE              0.176482     -0.002898      0.526459      0.018955      0.220444     -0.029869      0.231313
PSES               0.289683     -0.150146      0.375028      0.105971      0.396096      0.314094      0.188159
PPTA               0.176604     -0.031424      0.264532     -0.005763      0.043502     -0.001562      0.013836
PTURN             -0.088223     -0.233576     -0.073422      0.192311      0.062924     -0.110425      0.074251
PTENR              0.025854     -0.083765      0.009612      0.032731      0.180145      0.381288      0.096271
PTEXM             -0.003898      0.008497     -0.135573     -0.150787      0.020697     -0.009833     -0.084693
PWHITE             0.168750     -0.004928      0.468928      0.055323      0.231376     -0.039619      0.250524
PPROB             -0.142025     -0.036798     -0.294407      0.042926      0.057133      0.108707      0.080185
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                               3RD GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE

                  PSREP        TEXP        TCOND        TLOC        TSESB        TTRNG       TCOLAT

PNWENT        -0.039876   -0.069167   -0.136344    0.115654    0.172848    0.284799    0.187500
PHMWK         -0.080075    0.209133   -0.083279   -0.161315   -0.236952   -0.247399   -0.134137
PHRTCH        -0.174905    0.153220   -0.070734   -0.137115   -0.292432   -0.353828   -0.172870
TWHUND         0.132266   -0.011253    0.312343    0.094165    0.273248   -0.002142    0.332592
TWHITE         0.176063    0.015562    0.524181    0.007579    0.225992   -0.048117    0.232893
THRTCH         0.002113   -0.200168   -0.000540    0.103813    0.265238    0.234635    0.183434
TSIZE          0.125533   -0.161193    0.139876    0.138103    0.246007    0.256788    0.157111
SKGTN          0.151021   -0.281301    0.225473    0.128746    0.368588    0.449492    0.328099
SNURSY        -0.000607   -0.042589    0.106739    0.025763    0.050701    0.118111    0.050738
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                              3RD GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE

                 TRELAC        TPRHAB          TSEX         TRACE          TSAL        TVOCAB          SSES

PPLNT          0.013348      0.129120     -0.013129      0.077993      0.086269      0.075281      0.189519
PEXP           0.038838     -0.067918      0.058066     -0.173409     -0.002125     -0.109316     -0.079445
PTRNG         -0.002701      0.211062     -0.203082      0.070219      0.629680      0.229162      0.194175
PCOLAT        -0.050951      0.007370      0.017306      0.073355      0.098242      0.061700      0.006393
PINSTF        -0.024360      0.039738     -0.056220     -0.016477      0.035238     -0.004890      0.000178
PSPST         -0.061033      0.163075     -0.186315      0.126153      0.550528      0.274151      0.288107
PTRCK          0.027980      0.011019     -0.008044     -0.108959      0.019596     -0.065304     -0.026468
PTSTG         -0.003191     -0.022618      0.013740     -0.042582     -0.015096      0.003613      0.022735
PTRNS         -0.001924      0.078181     -0.069771      0.091206      0.278427      0.165016      0.029968
PREMD          0.009354      0.001434     -0.071710     -0.005879      0.130602      0.000131     -0.026432
PFLUN          0.019030     -0.102625      0.029630     -0.044317     -0.158876     -0.071688     -0.220289
PACRD         -0.115288      0.089479     -0.078964      0.275923      0.235018      0.278151      0.206203
PAGTXT         0.022573     -0.016834      0.034945     -0.049284     -0.057348     -0.055033     -0.047535
PAVTXT        -0.067910      0.020182      0.003831      0.150476     -0.050254      0.116008      0.117568
PRURUB        -0.040646      0.151575     -0.065392      0.009163      0.434152      0.172562      0.152585
PPTRAT         0.054614      0.092499     -0.037308     -0.096614      0.065663     -0.094995     -0.036861
PENRL         -0.002346      0.120533     -0.076092     -0.071004      0.264237      0.053741      0.066756
PPRSLR         0.005944      0.021722     -0.030541      0.080299      0.093780      0.069139      0.019839
PAGBLD        -0.069637      0.007650      0.040634      0.070765      0.018833      0.039877     -0.056250
PPUPRM         0.054040      0.077108     -0.050595     -0.109927      0.136837     -0.039016      0.006509
PSEX           0.015234      0.014189      0.140488     -0.010352     -0.044721     -0.014522      0.012261
PSREP          0.024274      0.204745     -0.005396      0.142335      0.175072      0.136870      0.295639
TEXP           0.080527     -0.104578      0.172685     -0.048790     -0.116205     -0.135708     -0.148341
TCOND         -0.059197      0.305478      0.040291      0.339379      0.089979      0.270096      0.644303
TLOC           0.023146      0.065786     -0.166946      0.106335      0.247680      0.180829      0.101081
TSESB         -0.068579      0.302847     -0.038730      0.321379      0.366187      0.393100      0.347303
TTRNG          0.038427      0.186469     -0.174197      0.016591      0.812546      0.248079      0.201419
TCOLAT        -0.113475      0.206621     -0.018268      0.350875      0.326640      0.382069      0.246282
TRELAC         1.000000     -0.106820      0.031612     -0.330437     -0.018812     -0.234123     -0.126156
TPRHAB        -0.106820      1.000000     -0.068153      0.346364      0.191235      0.276430      0.374182
TSEX           0.031612     -0.068153      1.000000     -0.025537     -0.246449     -0.070516     -0.042327
TRACE         -0.330437      0.346364     -0.025537      1.000000      0.159824      0.646560      0.551404
TSAL          -0.018812      0.191235     -0.246449      0.159824      1.000000      0.384922      0.270242
TVOCAB        -0.234123      0.276430     -0.070516      0.646560      0.384922      1.000000      0.476284
SSES          -0.126156      0.374182     -0.042327      0.551404      0.270242      0.476284      1.000000
SFSS          -0.180078      0.214647     -0.005432      0.478846      0.066100      0.348270      0.484087
SEXPTN        -0.030303      0.154626     -0.021929      0.176989      0.073992      0.161334      0.282446
SHBTS         -0.130910      0.296686     -0.017484      0.481785      0.221461      0.429265      0.600078
SEDPLN        -0.055934      0.169211     -0.018693      0.276020      0.098986      0.215875      0.346855
SATTUD        -0.031851      0.044837      0.049295      0.111587     -0.060880      0.084263      0.199841
SACHV         -0.140532      0.316523      0.013284      0.532720      0.190463      0.470312      0.680566
SSEX          -0.029459      0.016814      0.005126      0.075356      0.025553      0.056563      0.148081
SRACE         -0.281279      0.370484      0.004318      0.847777      0.059849      0.552747      0.652930
PSES          -0.070976 0.3259[illegible]    -0.050199      0.278768      0.264501      0.291740      0.467119
PPTA           0.086730  [illegible]      0.032179      0.035586     -0.018857      0.041329      0.210398
PTURN         -0.043769      0.036557     -0.062866      0.104890     -0.051119      0.092010      0.030040
PTENR         -0.064141      0.129564     -0.125689      0.095734      0.420975      0.180039      0.090369
PTEXM         -0.034800     -0.018806      0.048918     -0.220320     -0.044705     -0.186084     -0.173944
PWHITE        -0.262433      0.360916      0.000007      0.812328      0.060602      0.509983      0.568191
PPROB          0.030229     -0.033103     -0.039303     -0.062235      0.124930     -0.018929     -0.153177
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                              3RD GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE

                    TRELAC        TPRHAB        TSEX          TRACE         TSAL          TVDCAB        SSES

PNWENT           -0.050153      0.024896     -0.097775      0.131458      0.355202      0.216331      0.010685
PHMWK             0.071265     -0.072089      0.120588     -0.221445     -0.347599     -0.243921     -0.194991
PHRTCH           -0.032993     -0.200750      0.091886     -0.043991     -0.352509     -0.132326     -0.186495
TWHUND           -0.335321      0.331711     -0.039121      0.946140      0.146537      0.644883      0.523190
TWHITE           -0.278210      0.356334      0.008955      0.841839      0.033091      0.528993      0.617267
THRTCH           -0.175580      0.128061     -0.104936      0.167323      0.371285      0.240474      0.151449
TSIZE             0.009807      0.128772     -0.028169      0.225461      0.254434      0.335851      0.232509
SKGTN            -0.096548      0.220616     -0.161640      0.266978      0.553506      0.395934      0.420446
SNURSY           -0.028825      0.055760     -0.028583      0.126697      0.160457      0.181731      0.204568
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                     3RD GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE

                   SFSS         SEXPTN          SHBTS         SEDPLN         SATTUD          SACHV           SSEX

PPLNT          0.084387       0.091518       0.122066       0.064262      -0.009437       0.115105      -0.025849
PEXP          -0.091582       0.008014      -0.059043      -0.024674       0.068760      -0.092815      -0.007619
PTRNG         -0.043514       0.047170       0.159153       0.069679      -0.092796       0.094604      -0.036397
PCOLAT         0.007631      -0.000030       0.012753      -0.017470      -0.024036       0.022507      -0.028237
PINSTF        -0.022953       0.023258       0.020074       0.021294      -0.047242      -0.001857       0.009705
PSPST          0.076581       0.075247       0.227970       0.104046      -0.036184       0.200010       0.035646
PTRCK         -0.106820      -0.066802      -0.063062      -0.057163      -0.072945      -0.045280      -0.053243
PTSTG         -0.003850       0.026071       0.046433      -0.006287       0.009458       0.016971       0.005081
PTRNS         -0.074289       0.026891       0.051335      -0.027518      -0.081089      -0.029836       0.017272
PREMD         -0.092840      -0.063137      -0.038328      -0.064045      -0.088284      -0.087451      -0.043127
PFLUN         -0.068543      -0.099975      -0.164857      -0.102075      -0.102377      -0.155084      -0.016877
PACRD          0.170815       0.055895       0.245931       0.112940       0.034250       0.192674       0.030808
PAGTXT        -0.024406      -0.002067      -0.040888      -0.061288       0.020482      -0.044795       0.010062
PAVTXT         0.142792       0.058148       0.125053       0.085377       0.092402       0.140499       0.038249
PRURUB        -0.079686       0.010734       0.171366       0.009327      -0.077858       0.068932       0.007428
PPTRAT        -0.107952      -0.008393      -0.009273       0.008933      -0.066713      -0.109511      -0.007890
PENRL         -0.087733       0.023410       0.080756       0.014506      -0.096460      -0.034769      -0.025049
PPRSLR         0.003125       0.040734       0.032222       0.014412       0.040205       0.012149       0.013746
PAGBLD         0.017074      -0.011538       0.036375       0.012775       0.067049      -0.001724       0.047734
PPUPRM        -0.107223      -0.003080       0.009904       0.037484      -0.076990      -0.076182      -0.033348
PSEX          -0.018210      -0.025556       0.009346      -0.033337       0.016976       0.012394       0.016694
PSREP          0.119270       0.058400       0.187359       0.148769       0.015235       0.247752      -0.009824
TEXP          -0.008204      -0.023244      -0.087528      -0.010169       0.113283      -0.042878       0.003696
TCOND          0.354090       0.149828       0.394551       0.282786       0.153885       0.546655       0.063258
TLOC           0.007838       0.050933       0.077695      -0.011069      -0.098255       0.079607      -0.009336
TSESB          0.094712       0.046445       0.241417       0.082269      -0.059566       0.196497      -0.011722
TTRNG         -0.015427       0.048889       0.176751       0.071707      -0.047928       0.128759       0.010176
TCOLAT         0.144783       0.085468       0.212988       0.089303      -0.041863       0.193049       0.001021
TRELAC        -0.180078      -0.030303      -0.130910      -0.055934      -0.031851      -0.140532      -0.029459
TPRHAB         0.214647       0.154626       0.296686       0.169211       0.044837       0.316523       0.016814
TSEX          -0.005432      -0.021929      -0.017484      -0.018693       0.049295       0.013284       0.005126
TRACE          0.478846       0.176989       0.481785       0.276020       0.111587       0.532720       0.075356
TSAL           0.066100       0.073992       0.221461       0.098986      -0.060880       0.190463       0.025553
TVOCAB         0.348270       0.161334       0.429265       0.215875       0.084263       0.470312       0.056563
SSES           0.484087       0.282446       0.600078       0.346855       0.199841       0.680566       0.148081
SFSS           1.000000       0.472595       0.602983       0.393544       0.460852       0.462555       0.436264
SEXPTN         0.472595       1.000000       0.518033       0.510163       0.509736       0.254926       0.406266
SHBTS          0.602983       0.518033       1.000000       0.484341       0.407203       0.523297       0.399039
SEDPLN         0.393544       0.510163       0.484341       1.000000       0.410432       0.363378       0.250709
SATTUD         0.460852       0.509736       0.407203       0.410432       1.000000       0.219107       0.404346
SACHV          0.462555       0.254926       0.523297       0.363378       0.219107       1.000000       0.115050
SSEX           0.436264       0.406266       0.399039       0.250709       0.404346       0.115050       1.000000
SRACE          0.577182       0.226342       0.529414       0.308697       0.221172       0.627385       0.142900
PSES           0.149190       0.085444       0.338369       0.149744       0.005779       0.381468      -0.006230
PPTA           0.101666       0.082201       0.117665       0.099723       0.069248       0.151009       0.042678
PTURN          0.027838       0.031706       0.020601      -0.028153      -0.046574       0.024589       0.017746
PTENR          0.000254      -0.027434       0.058401      -0.002354      -0.064749       0.027655      -0.060477
PTEXM         -0.196011      -0.114626      -0.167043      -0.142696      -0.091438      -0.169387      -0.090365
PWHITE         0.486204       0.193910       0.455181       0.288870       0.173103       0.564013       0.059976
PPROB         -0.143930      -0.019666      -0.068538      -0.047641      -0.095348      -0.170187       0.014824
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                          3RD GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE

                      SFSS          SEXPTN          SHBTS          SEDPLN          SATTUD          SACHV           SSEX

PNWENT            -0.043100      -0.023502       0.028475      -0.044452      -0.068403      -0.013341       0.012797
PHMWK             -0.089078       0.011128      -0.159916      -0.033632       0.008933      -0.141955       0.013883
PHRTCH             0.012586      -0.082498      -0.192198      -0.087745       0.052886      -0.072497       0.008560
TWHUND             0.473975       0.186580       0.475506       0.262720       0.107351       0.513277       0.080148
TWHITE             0.512914       0.199576       0.489028       0.310599       0.167915       0.582279       0.074987
THRTCH             0.043654       0.045758       0.125583       0.039755      -0.083185       0.088039       0.051147
TSIZE              0.111133       0.097890       0.236115       0.078942       0.036194       0.192951       0.008594
SKGTN              0.231383       0.216431       0.416258       0.232044       0.060613       0.327096       0.144131
SNURSY             0.269173       0.390024       0.293473       0.246511       0.258409       0.190357       0.263708
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                       3RD GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE

                       SRACE          PSES          PPTA         PTURN         PTENR         PTEXM        PWHITE

PPLNT               0.102791      0.154161      0.058539     -0.007558     -0.073189     -0.018105      0.075535
PEXP               -0.136576      0.029303      0.068919     -0.189037      0.010620      0.080807     -0.152835
PTRNG              -0.015472      0.325114      0.030626     -0.039239      0.305185      0.062936     -0.011214
PCOLAT              0.013309      0.013137     -0.008801      0.049135      0.012351      0.010201      0.031260
PINSTF             -0.039604     -0.047574     -0.041414      0.040322     -0.016189     -0.029609     -0.058213
PSPST               0.058900      0.360172      0.018122     -0.056489      0.239419      0.020471      0.063147
PTRCK              -0.102490      0.073370      0.073328     -0.027358      0.013215      0.115162     -0.096999
PTSTG              -0.041966      0.001871      0.040465     -0.048376     -0.041172     -0.046563     -0.048104
PTRNS              -0.055165      0.116201     -0.021335      0.128034      0.083493      0.054238     -0.017737
PREMD              -0.079457     -0.009025     -0.002250     -0.041979      0.047295      0.030219     -0.084506
PFLUN              -0.122393     -0.236739     -0.046385      0.011549     -0.086582      0.077764     -0.162006
PACRD               0.212802      0.147789     -0.026040      0.020620      0.179206     -0.203007      0.217681
PAGTXT             -0.039720     -0.018107     -0.068056      0.051278      0.008516      0.000542     -0.034773
PAVTXT              0.163251      0.020064      0.043345      0.036216     -0.031913     -0.043625      0.137238
PRURUB             -0.068849      0.373374      0.036900     -0.067256      0.189169      0.213032     -0.047088
PPTRAT             -0.087321      0.186686     -0.020587     -0.075586      0.092189      0.099756     -0.082014
PENRL              -0.135625      0.283777     -0.030670     -0.067301      0.095812      0.158792     -0.133752
PPRSLR              0.043663     -0.026684      0.009921      0.009228      0.006266     -0.015591      0.070856
PAGBLD              0.038755     -0.102943     -0.071203     -0.069564      0.097442      0.061252      0.031586
PPUPRM             -0.092410      0.204404     -0.023312     -0.082555      0.134550      0.080665     -0.100756
PSEX                0.013520     -0.068930      0.090980     -0.033324      0.040602      0.010935      0.023513
PSREP               0.176482      0.289683      0.176604     -0.088223      0.025854     -0.003898      0.168750
TEXP               -0.002898     -0.150146     -0.031424     -0.233576     -0.083765      0.008497     -0.004928
TCOND               0.526459      0.375028      0.264332     -0.073422      0.009612     -0.133573      0.468928
TLOC                0.018955      0.105971     -0.005763      0.192311      0.032731     -0.150787      0.055323
TSESB               0.220444      0.396096      0.043502      0.062924      0.180145      0.020697      0.231376
TTRNG              -0.029869      0.314094     -0.001562     -0.110425      0.381288     -0.009833     -0.039619
TCOLAT              0.231313      0.188159      0.013836      0.074251      0.096271     -0.084693      0.250524
TRELAC             -0.281279     -0.070976      0.085730     -0.043769     -0.064141     -0.004800     -0.262433
TPRHAB              0.370484      0.325924      0.058197      0.036557      0.129564     -0.018806      0.360916
TSEX                0.004318     -0.050199      0.032179     -0.062866     -0.125689      0.048918      0.000037
TRACE               0.847777      0.278768      0.035586      0.104890      0.095734     -0.220320      0.812328
TSAL                0.059849      0.264501     -0.018857     -0.051119      0.420975     -0.044705      0.060602
TVOCAB              0.552747      0.291740      0.041329      0.092010      0.180039     -0.186084      0.509983
SSES                0.652930      0.467119      0.210398      0.030040      0.090369     -0.173944      0.568191
SFSS                0.577182      0.149190      0.101666      0.027838      0.000254     -0.196011      0.486204
SEXPTN              0.226342      0.086444      0.082201      0.031706     -0.027434     -0.114626      0.193910
SHBTS               0.529414      0.338369      0.117665      0.020601      0.058401     -0.167043      0.455181
SEDPLN              0.308697      0.149744      0.099723     -0.028153     -0.002364     -0.142696      0.288870
SATTUD              0.221172      0.005779      0.069248     -0.046574     -0.064749     -0.091438      0.173103
SACHV               0.627385      0.381468      0.151009      0.024589      0.027655     -0.169387      0.564013
SSEX                0.142900     -0.006230      0.042678      0.017746     -0.060477     -0.090365      0.059976
SRACE               1.000000      0.300577      0.104473      0.065723      0.041315     -0.227180      0.869924
PSES                0.300577      1.000000      0.182496     -0.059699      0.115404      0.016454      0.278734
PPTA                0.104473      0.182496      1.000000     -0.012962      0.012291     -0.012107      0.082303
PTURN               0.065723     -0.059699     -0.012962      1.000000     -0.007209     -0.072225      0.058118
PTENR               0.041315      0.115404      0.012291     -0.007209      1.000000     -0.047308      0.023631
PTEXM              -0.227180      0.016454     -0.012107     -0.072225     -0.047308      1.000000     -0.205860
PWHITE              0.869924      0.278734      0.082303      0.058118      0.023631     -0.205860      1.000000
PPROB              -0.211171     -0.072936     -0.147334     -0.023454      0.036911      0.074356     -0.183765
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                        3RD GRADE - SET 1    59

CORRELATION MATRIX      SELECTED VARIABLE

                        SRACE           PSES            PPTA            PTURN           PTENR           PTEXM           PWHITE

PNWENT              -0.068603        0.055638       -0.051880        0.019048        0.174021        0.023249       -0.084883
PHMWK               -0.136729       -0.155777       -0.006681       -0.027079       -0.169432        0.034934       -0.179550
PHRTCH              -0.002883       -0.356347       -0.008452        0.039381       -0.135672       -0.077762       -0.001199
TWHUND               0.819278        0.243237        0.027883        0.093131        0.080644       -0.203821        0.781199
TWHITE               0.919455        0.296436        0.086687        0.069925        0.024005       -0.216960        0.897735
THRTCH               0.076737        0.193115       -0.034664        0.026900        0.272384        0.088835        0.074463
TSIZE                0.176222        0.259922        0.034453       -0.021257        0.100008       -0.110188        0.167495
SKGTN                0.220975        0.362316        0.049789        0.020473        0.252946       -0.077210        0.200176
SNURSY               0.118993        0.032085        0.050710        0.059972        0.008001       -0.051879        0.109993
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                       3RD GRADE - SET 1    59

CORRELATION MATRIX      SELECTED VARIABLE

                    PPROB        PNWENT         PHMWK        PHRTCH        TWHUND        TWHITE        THRTCH

PPLNT            0.047869     -0.054684      0.133134     -0.320350      0.057343      0.075995     -0.118985
PEXP            -0.007426      0.002593      0.041948     -0.030284     -0.163425     -0.141730     -0.065211
PTRNG            0.181393      0.270199     -0.171430     -0.592056      0.052726     -0.029947      0.272292
PCOLAT           0.039422      0.051609     -0.018775     -0.055604      0.067009      0.019418      0.045244
PINSTF           0.160701      0.008273      0.336095     -0.166845     -0.023399     -0.054404     -0.011786
PSPST            0.103189      0.232409     -0.165300     -0.422205      0.105615      0.049255      0.290990
PTRCK            0.037313     -0.021353      0.073567     -0.096886     -0.105239     -0.098725      0.029587
PTSTG            0.012951     -0.024929      0.217537     -0.000224     -0.033312     -0.041075     -0.002091
PTRNS            0.183835      0.247891     -0.134468     -0.224118      0.077422     -0.044096      0.121725
PREMD            0.134081      0.112091      0.033067     -0.075245      0.002734     -0.087680      0.032743
PFLUN            0.075725     -0.026722      0.108823      0.130532     -0.018683     -0.151736     -0.179086
PACRD           -0.001539      0.110725     -0.139318     -0.061745      0.272846      0.216105      0.113806
PAGTXT           0.007627      0.037496     -0.004532      0.051305     -0.057450     -0.026123      0.001656
PAVTXT          -0.158221     -0.034445     -0.038572      0.069676      0.159413      0.163841      0.008774
PRURUB           0.154431      0.199820     -0.299802     -0.429220      0.013448     -0.058698      0.244168
PPTRAT           0.023848      0.005713     -0.070675     -0.165386     -0.093838     -0.058951      0.057555
PENRL            0.207760      0.148339      0.025355     -0.525605     -0.079591     -0.139774      0.125645
PPRSLR           0.042826      0.057789     -0.063620     -0.074541      0.069496      0.034965      0.034442
PAGBLD           0.013376      0.122385     -0.035054      0.129239      0.097506      0.031552      0.084169
PPUPRM           0.050255      0.018453     -0.064366     -0.223702     -0.108020     -0.083480      0.078958
PSEX            -0.059764     -0.063443     -0.162713      0.219917      0.006152      0.013529      0.042765
PSREP           -0.142025     -0.039876     -0.088075     -0.174905      0.132266      0.176063      0.002113
TEXP            -0.036798     -0.069167      0.209133      0.153220     -0.011253      0.015562     -0.200168
TCOND           -0.294407     -0.136344     -0.083279     -0.070734      0.312343      0.524181     -0.000540
TLOC             0.042926      0.115654     -0.161315     -0.137115      0.094165      0.007579      0.103813
TSESB            0.057133      0.172848     -0.236952     -0.292432      0.273248      0.225992      0.265238
TTRNG            0.108707      0.284799     -0.247399     -0.353828     -0.002142     -0.048117      0.234635
TCOLAT           0.080186      0.187500     -0.134137     -0.172870      0.332592      0.232893      0.183434
TRELAC           0.030229     -0.050153      0.071265     -0.032993     -0.335321     -0.278210     -0.175580
TPRHAB          -0.033103      0.024895     -0.072089     -0.200750      0.331711      0.356334      0.128061
TSEX            -0.039303     -0.097775      0.120588      0.091886     -0.039121      0.008955     -0.104936
TRACE           -0.062235      0.131458     -0.221445     -0.043991      0.946140      0.841839      0.167323
TSAL             0.124930      0.355202     -0.347599     -0.352509      0.146537      0.033091      0.371285
TVOCAB          -0.018929      0.216331     -0.242921     -0.132326      0.644883      0.528993      0.240474
SSES            -0.153177      0.010685     -0.194991     -0.186495      0.523190      0.617267      0.151449
SFSS            -0.143930     -0.043100     -0.089078      0.012586      0.473975      0.512914      0.043654
SEXPTN          -0.019666     -0.023502      0.011129     -0.082498      0.186580      0.199576      0.045758
SHBTS           -0.068538      0.028476     -0.159916     -0.192198      0.475506      0.489028      0.125583
SEDPLN          -0.047641     -0.044452     -0.033632     -0.087745      0.262720      0.310599      0.039755
SATTUD          -0.095348     -0.068403      0.008933      0.052886      0.107351      0.167915     -0.083185
SACHV           -0.170187     -0.013341     -0.141955     -0.072497      0.513277      0.582279      0.088039
SSEX             0.014824      0.012797      0.013883      0.008560      0.080148      0.074987      0.051147
SRACE           -0.211171     -0.058603     -0.135729     -0.002883      0.819278      0.919455      0.076737
PSES            -0.072936      0.055638     -0.155777     -0.356347      0.243237      0.296436      0.193115
PPTA            -0.147334     -0.051880     -0.006681     -0.008452      0.027883      0.086687     -0.034664
PTURN           -0.023454      0.019048     -0.027079      0.039381      0.093131      0.069925      0.026900
PTENR            0.036911      0.174021     -0.169432     -0.135672      0.080644      0.024005      0.272384
PTEXM            0.074356      0.023249      0.034934     -0.077762     -0.203821     -0.216960      0.088835
PWHITE          -0.183765     -0.084883     -0.179550     -0.001199      0.781199      0.897735      0.074463
PPROB            1.000000      0.156177      0.040572     -0.159643     -0.053984     -0.218569      0.063088
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                          3RD GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE

                    PPROB          PNWENT          PHMWK         PHRTCH         TWHUND         TWHITE         THRTCH

PNWENT           0.156177        1.000000      -0.197179      -0.146572       0.131761      -0.090916       0.291373
PHMWK            0.040572       -0.197179       1.000000       0.117217      -0.217343      -0.148561      -0.192471
PHRTCH          -0.159643       -0.146572       0.117217       1.000000      -0.020805       0.012989      -0.132814
TWHUND          -0.053984        0.131761      -0.217343      -0.020805       1.000000       0.814944       0.154792
TWHITE          -0.218569       -0.090916      -0.148561       0.012989       0.814944       1.000000       0.075120
THRTCH           0.063088        0.291373      -0.192471      -0.132814       0.154792       0.075120       1.000000
TSIZE            0.028475        0.124597      -0.142008      -0.234260       0.202351       0.144860       0.075464
SKGTN            0.058827        0.281874      -0.324038      -0.315607       0.239151       0.197387       0.350084
SNURSY           0.016778        0.081834      -0.063145      -0.007842       0.120473       0.100955       0.075676
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                     3RD GRADE - SET 1    59

CORRELATION MATRIX       SELECTED VARIABLE

                        TSIZE           SKGTN            SNURSY

PPLNT                0.078501        0.040638         0.022501
PEXP                -0.023634       -0.092508        -0.002014
PTRNG                0.276089        0.464504         0.060376
PCOLAT              -0.007701        0.055285        -0.008100
PINSTF              -0.028185       -0.008100         0.034225
PSPST                0.212558        0.468824         0.089364
PTRCK               -0.032413       -0.001559        -0.017678
PTSTG                0.002760        0.003214         0.013954
PTRNS                0.134831        0.168622         0.025899
PREMD                0.005574        0.040881         0.009350
PFLUN               -0.122927       -0.224851        -0.046587
PACRD                0.139917        0.159493         0.043910
PAGTXT              -0.023463       -0.068992        -0.015285
PAVTXT               0.044111        0.030933         0.030056
PRURUB               0.156643        0.430115         0.032537
PPTRAT              -0.007774        0.135753        -0.087299
PENRL                0.114141        0.230460        -0.023035
PPRSLR               0.021685        0.065574         0.040205
PAGBLD              -0.105288        0.023344         0.048470
PPUPRM               0.036314        0.175753        -0.082766
PSEX                -0.075835       -0.035306         0.026034
PSREP                0.125533        0.151021        -0.000607
TEXP                -0.161193       -0.281301        -0.042589
TCOND                0.139876        0.225473         0.106739
TLOC                 0.138103        0.128746         0.025763
TSESB                0.246007        0.368588         0.050701
TTRNG                0.256788        0.449492         0.118111
TCOLAT               0.157111        0.328099         0.050738
TRELAC               0.009807       -0.096548        -0.028825
TPRHAB               0.128772        0.220616         0.055760
TSEX                -0.028169       -0.151640        -0.028583
TRACE                0.225461        0.266978         0.126697
TSAL                 0.254434        0.553506         0.160457
TVOCAB               0.335851        0.395934         0.181731
SSES                 0.232509        0.420446         0.204568
SFSS                 0.111133        0.231383         0.269173
SEXPTN               0.097890        0.216431         0.390024
SHBTS                0.236115        0.416258         0.293473
SEDPLN               0.078942        0.232044         0.246511
SATTUD               0.036194        0.060613         0.258409
SACHV                0.192951        0.327096         0.190357
SSEX                 0.008594        0.144131         0.263708
SRACE                0.176222        0.220975         0.118993
PSES                 0.259922        0.362316         0.032085
PPTA                 0.034453        0.049789         0.050710
PTURN               -0.021257        0.020473         0.059972
PTENR                0.100008        0.252946         0.008001
PTEXM               -0.110188       -0.077210        -0.051879
PWHITE               0.167495        0.200176         0.109993
PPROB                0.028475        0.058827         0.016778
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                            3RD GRADE - SET 1    59

CORRELATION MATRIX      SELECTED VARIABLE

                          TSIZE           SKGTN           SNURSY

PNWENT                 0.124597        0.281874        0.081834
PHMWK                 -0.142008       -0.324038       -0.063146
PHRTCH                -0.234260       -0.316607       -0.007842
TWHUND                 0.202351        0.239151        0.120473
TWHITE                 0.144860        0.197387        0.100955
THRTCH                 0.075464        0.350084        0.075676
TSIZE                  1.000000        0.241224        0.075581
SKGTN                  0.241224        1.000000        0.197206
SNURSY                 0.075581        0.197206        1.000000
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                        3RD GRADE - SET 2   59

SELECTED VARIABLE


THE NUMBER OF OBSERVATIONS IS       56834.

VARIABLE          SUMS        SUMS OF SQUARES           MEAN          SIGMA(N)        SIGMA(N-1)
PLGRD        -16205.9624        45895.0811           -0.2851           0.8522            0.8522
PPTST          1627.7657        58935.5513            0.0286           1.0179            1.0179
PASGN           -19.3864        50492.8467           -0.0003           0.9426            0.9426
PDATTN          860.7728        50442.1167            0.0151           0.9420            0.9420
PCRED         -2318.7180        47553.2676           -0.0408           0.9138            0.9138
TCRED        -15303.2173        17159.606            -0.2693           0.4790            0.4790
TASGN        -20202.4932        29038.3169           -0.3555           0.6201            0.6201
TINST        -13984.4822         5675.9019           -0.2461           0.1983            0.1983
THONOR       -11370.6115         8970.1390           -0.2001           0.3432            0.3432
SNOHM         -5002.7642        11587.4305           -0.0880           0.4429            0.4429
SFORPT        -8193.1626        18226.2036           -0.1442           0.5476            0.5476
SFORST        -8375.1605        19614.1475           -0.1474           0.5687            0.5687
SBIRTH        -2024.8690        11406.7531           -0.0356           0.4466            0.4466
PFNURS          594.9909        54265.2793            0.0105           0.9771            0.9771
PCOMPL         3138.7488        45892.8823            0.0552           0.8969            0.8969
PLNDAY        -7473.2562        51615.3276           -0.1315           0.9439            0.9439
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                        3RD GRADE - SET 2   59

CORRELATION MATRIX      SELECTED VARIABLE

                      SRACE          PFNURS          PCOMPL          PLNDAY           PLGRD           PPTST           PASGN

PPLNT              0.092797       -0.005214       -0.049463        0.132568        0.248333       -0.013670       -0.048818
PEXP              -0.128286        0.036174       -0.083685        0.008726       -0.002299        0.076772       -0.103478
PTRNG             -0.014982        0.066449        0.189064       -0.248529        0.049154       -0.057927        0.195926
PCOLAT             0.012495       -0.011299       -0.023372        0.012062       -0.002317        0.036063        0.043844
PINSTF            -0.047483        0.032111       -0.019098        0.155853        0.393190        0.025098       -0.063144
PSPST              0.052951        0.097849        0.295605       -0.200988        0.087049       -0.035715        0.183545
PTRCK             -0.096273        0.015365       -0.016736        0.075270        0.116191        0.012652       -0.014358
PTSTG             -0.037774        0.021984        0.054103        0.093746        0.230660        0.026184       -0.029398
PTRNS             -0.049607        0.039307        0.073648       -0.087033       -0.099980       -0.019067        0.072718
PREMD             -0.074774        0.060564       -0.013350       -0.054227        0.055576       -0.018631        0.048793
PFLUN             -0.114820        0.067472       -0.107858        0.120751       -0.005593        0.111799       -0.129454
PACRD              0.164628        0.045361        0.267687       -0.031355        0.016682       -0.017066        0.059501
PAGTXT            -0.036175        0.000462       -0.063531        0.052338       -0.015602        0.063149        0.015391
PAVTXT             0.152436       -0.031014        0.031820       -0.032290       -0.015228       -0.064453        0.028967
PRURUB            -0.064182        0.120692        0.135373       -0.276651       -0.112086       -0.006954        0.148466
PPTRAT            -0.081624       -0.033186       -0.083339       -0.092957       -0.095792       -0.041191        0.033351
PENRL             -0.126868        0.062612       -0.023585       -0.072790        0.151160       -0.009823        0.062964
PPRSLR             0.040973        0.030200        0.020444       -0.037229       -0.071951        0.023711        0.027683
PAGBLD             0.036407        0.055202        0.082566       -0.072996       -0.034031        0.006259        0.005699
PPUPRM            -0.086778       -0.009336       -0.046981       -0.089033       -0.046799       -0.046983        0.036639
PSEX               0.013253        0.066674        0.062659       -0.081858       -0.195317        0.059167       -0.038441
PSREP              0.165732       -0.030216        0.101822       -0.042911       -0.002091       -0.082842        0.033811
TEXP              -0.002921       -0.017402       -0.116183        0.153210        0.038584        0.022314       -0.152205
TCOND              0.508935       -0.147175        0.157025       -0.053913       -0.014588       -0.046285        0.098024
TLOC               0.018378        0.015766        0.075851       -0.086614       -0.016988       -0.000024        0.071532
TSESB              0.212035        0.021210        0.171683       -0.196885       -0.051151       -0.074937        0.185109
TTRNG             -0.028265        0.083035        0.214461       -0.220406       -0.072874       -0.013269        0.202012
TCOLAT             0.218589        0.057244        0.147600       -0.090967        0.001672       -0.038736        0.152501
TRELAC            -0.271788        0.012421       -0.112622        0.086837       -0.000825        0.017017       -0.054614
TPRHAB             0.351558       -0.032606        0.153907       -0.028992        0.022731       -0.048835        0.117694
TSEX               0.002671       -0.003057       -0.058502        0.044614       -0.040102        0.019454       -0.047756
TRACE              0.820118       -0.051435        0.316203       -0.127090       -0.015813       -0.117890        0.192745
TSAL               0.057472        0.094147        0.321287       -0.341776       -0.115346       -0.052388        0.253215
TVOCAB             0.533350       -0.015636        0.345267       -0.207169       -0.051316       -0.086347        0.170935
SSES               0.652930       -0.091441        0.285256       -0.160434       -0.005370       -0.083148        0.178168
SFSS               0.577182       -0.068466        0.188188       -0.026809       -0.023177       -0.085983        0.094957
SEXPTN             0.226342       -0.041500        0.083237        0.000309        0.003243       -0.046895        0.034088
SHBTS              0.529414       -0.034046        0.254058       -0.112140       -0.029905       -0.081673        0.159729
SEDPLN             0.308697       -0.087905        0.115452       -0.042524        0.023014       -0.061615        0.093313
SATTUD             0.221172       -0.074718        0.048980        0.028880       -0.005779       -0.042691       -0.007240
SACHV              0.627385       -0.107295        0.249494       -0.069661        0.032053       -0.077433        0.148201
SSEX               0.142900       -0.007194        0.058034        0.006001       -0.007973       -0.007819        0.002463
SRACE              1.000000       -0.121608        0.258825       -0.061960        0.027606       -0.120265        0.154490
PFNURS            -0.121608        1.000000        0.056912       -0.028178       -0.018519        0.080042       -0.009156
PCOMPL             0.258825        0.056912        1.000000       -0.164701       -0.064835       -0.028150        0.161146
PLNDAY            -0.061960       -0.028178       -0.164701        1.000000        0.129566        0.116404       -0.166199
PLGRD              0.027606       -0.018519       -0.064835        0.129566        1.000000       -0.024351       -0.069272
PPTST             -0.120265        0.080042       -0.028150        0.116404       -0.024351        1.000000       -0.045077
PASGN              0.154490       -0.009156        0.161146       -0.166199       -0.069272       -0.045077        1.000000
PDATTN             0.319758       -0.055426        0.233987       -0.011546       -0.026079       -0.080617        0.096608
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                          3RD GRADE - SET 2   59

CORRELATION MATRIX      SELECTED VARIABLE

                     SRACE          PFNURS          PCOMPL          PLNDAY           PLGRD           PPTST           PASGN

PCRED            -0.062264        0.025378        0.064718       -0.143176       -0.034317        0.027284       -0.008337
TCRED            -0.069810        0.032628        0.078795       -0.170163       -0.065446        0.012350        0.081353
TASGN             0.149125       -0.012272       -0.067341        0.187452        0.178537       -0.003238       -0.109110
TINST            -0.142548        0.005057       -0.021517       -0.013619        0.009355        0.001392       -0.001855
THONOR            0.089852        0.004073        0.069043        0.053968        0.048739       -0.015838        0.034943
SNOHM             0.661007       -0.083668        0.201448       -0.076276        0.018839       -0.083874        0.093770
SFORPT            0.297477       -0.093580        0.027287        0.046805       -0.008023       -0.049918        0.000382
SFORST            0.304988       -0.048177        0.056050        0.031378       -0.021196       -0.038285        0.007310
SBIRTH            0.255620       -0.069830        0.024337        0.006723       -0.001709       -0.021949        0.050150
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                   3RD GRADE - SET 2   59

CORRELATION MATRIX      SELECTED VARIABLE

                 PDATTN        PCRED        TCRED        TASGN        TINST       THONOR        SNOHM

PPLNT          0.017380     0.067064     0.074474     0.202138    -0.013928     0.105480     0.177962
PEXP          -0.075822     0.056715     0.026094     0.007148    -0.004913     0.006836    -0.040728
PTRNG         -0.064787     0.120866     0.172381    -0.168831    -0.002333     0.117794     0.136371
PCOLAT         0.037992     0.026411     0.073284     0.059020    -0.024900     0.013267     0.012705
PINSTF        -0.049335     0.097531     0.032701     0.208221     0.093403     0.079246    -0.010322
PSPST          0.022223     0.156469     0.147003    -0.103706     0.041611     0.070342     0.177128
PTRCK         -0.057616    -0.001305     0.035456     0.005929     0.016373     0.016046    -0.072537
PTSTG          0.021539     0.060264     0.015253     0.115604     0.031103     0.010531    -0.012388
PTRNS         -0.075651     0.105456     0.148380    -0.093471    -0.040940     0.094222     0.040285
PREMD         -0.030381     0.052936     0.102468     0.030347     0.055261     0.023898    -0.062461
PFLUN         -0.113899    -0.041208    -0.032180     0.188316    -0.007846    -0.015984    -0.198227
PACRD          0.098325     0.005782     0.013555     0.000905    -0.014509     0.072009     0.143385
PAGTXT        -0.104300    -0.018368     0.025985    -0.047929     0.027901    -0.001141    -0.010628
PAVTXT         0.101227    -0.061117    -0.095987     0.061220    -0.007334     0.010669     0.101656
PRURUB        -0.070499     0.125094     0.144381    -0.320924     0.017137     0.104860     0.139291
PPTRAT        -0.126666     0.079819     0.033464    -0.257455    -0.067446     0.011138    -0.020445
PENRL         -0.174017     0.165806     0.079250    -0.051583     0.030663     0.103360     0.053105
PPRSLR         0.046195     0.054503     0.082573     0.042645    -0.012702     0.078683     0.035461
PAGBLD        -0.014077    -0.020625     0.005913    -0.037515     0.017334    -0.028330    -0.013109
PPUPRM        -0.137513     0.058117     0.018885    -0.190060    -0.029367     0.019554    -0.016031
PSEX          -0.006290    -0.079823    -0.014617    -0.092782    -0.013816    -0.076694    -0.049694
PSREP          0.132610     0.050536     0.065355    -0.035653    -0.004380     0.098782     0.241984
TEXP           0.030052    -0.070563     0.007351     0.160534     0.007407    -0.003747    -0.028521
TCOND          0.312110    -0.032958    -0.008862     0.043727    -0.062557     0.118662     0.476880
TLOC           0.075208     0.063727     0.190708     0.014447    -0.025457     0.104699     0.007994
TSESB          0.075538     0.155772     0.217321    -0.129263    -0.032785     0.137601     0.279064
TTRNG          0.019919     0.180302     0.321101    -0.153868     0.090623     0.195340     0.133781
TCOLAT         0.125354     0.104767     0.157601     0.087732     0.030880     0.175821     0.201798
TRELAC        -0.053728     0.016239     0.148393    -0.089095     0.149815     0.083805    -0.155600
TPRHAB         0.130930     0.004889     0.103031     0.019824    -0.031359     0.143782     0.343709
TSEX          -0.005664    -0.068560    -0.180259    -0.059444    -0.215874    -0.138266     0.044152
TRACE          0.298450    -0.007457    -0.013772     0.180124    -0.159112     0.108056     0.551737
TSAL           0.049960     0.207081     0.376891    -0.142292     0.041431     0.111213     0.147114
TVOCAB         0.235456     0.083098     0.105879     0.071909    -0.103718     0.143053     0.415274
SSES           0.279830     0.016059     0.046956     0.020996    -0.092464     0.133795     0.678348
SFSS           0.198745    -0.046940    -0.001238     0.135376    -0.032521     0.016178     0.483480
SEXPTN         0.083048    -0.023846     0.004335     0.036784    -0.009419     0.009036     0.318389
SHBTS          0.203959     0.000791     0.026060     0.041994    -0.056521     0.091512     0.612981
SEDPLN         0.132553    -0.046896    -0.003817     0.017852    -0.052379     0.018153     0.363048
SATTUD         0.081916    -0.062315    -0.039035     0.093733     0.030805    -0.047280     0.250971
SACHV          0.291478    -0.043959    -0.027159     0.067145    -0.100432     0.098652     0.571618
SSEX           0.016415    -0.034565     0.029058     0.040926     0.005494    -0.038886     0.210224
SRACE          0.319758    -0.062264    -0.069810     0.149125    -0.142548     0.089852     0.661007
PFNURS        -0.055426     0.025378     0.032628    -0.012272     0.005057     0.004073    -0.083668
PCOMPL         0.233987     0.064718     0.078795    -0.067341    -0.021517     0.069043     0.201448
PLNDAY        -0.011546    -0.143176    -0.170163     0.187452    -0.013619     0.053968    -0.076276
PLGRD         -0.026079    -0.034317    -0.065446     0.178537     0.009355     0.048739     0.018839
PPTST         -0.080617     0.027284     0.012350    -0.003238     0.001392    -0.015838    -0.083874
PASGN          0.096608    -0.008337     0.081353    -0.109110    -0.001855     0.034943     0.093770
PDATTN         1.000000    -0.027287     0.008235     0.070496    -0.048905     0.059504     0.247573
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                        3RD GRADE - SET 2   59

CORRELATION MATRIX      SELECTED VARIABLE

                     PDATTN        PCRED         TCRED         TASGN         TINST        THONOR        SNOHM

PCRED             -0.027287      1.000000      0.262040     -0.002949      0.057818     -0.006357      0.012748
TCRED              0.008235      0.262040      1.000000      0.001388      0.164009      0.043415      0.015569
TASGN              0.070496     -0.002949      0.001388      1.000000      0.030369      0.028201      0.084112
TINST             -0.048905      0.057818      0.164009      0.030369      1.000000      0.058119     -0.075174
THONOR             0.059504     -0.006357      0.043415      0.028201      0.058119      1.000000      0.137833
SNOHM              0.247573      0.012748      0.015569      0.084112     -0.075174      0.137833      1.000000
SFORPT             0.130825     -0.089045     -0.074402      0.026998      0.008905      0.026935      0.319049
SFORST             0.139210     -0.075266     -0.084841      0.037115     -0.022582     -0.028026      0.301967
SBIRTH             0.123285      0.021227      0.023332      0.127587     -0.038060      0.055354      0.194306
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE                                                         3RD GRADE - SET 2    59

CORRELATION MATRIX      SELECTED VARIABLE

                      SFORPT          SFORST          SBIRTH

PPLNT               0.015556       -0.010891        0.118963
PEXP                0.015043        0.003387       -0.048163
PTRNG              -0.116749       -0.112454       -0.007270
PCOLAT             -0.048598       -0.048086        0.082573
PINSTF             -0.085732       -0.068365        0.005979
PSPST              -0.036815       -0.020342        0.033170
PTRCK              -0.079283       -0.093078       -0.003155
PTSTG               0.010196        0.011502       -0.013071
PTRNS              -0.093999       -0.066420        0.078010
PREMD              -0.061833       -0.051818        0.019114
PFLUN              -0.159290       -0.148693        0.003548
PACRD               0.035249        0.054793        0.061848
PAGTXT             -0.025395       -0.017766       -0.016085
PAVTXT              0.091220        0.061435        0.097692
PRURUB             -0.065797       -0.037673       -0.104770
PPTRAT             -0.014346       -0.035947       -0.068819
PENRL              -0.085958       -0.087090       -0.015660
PPRSLR             -0.042024       -0.004375        0.030320
PAGBLD              0.009580        0.025553       -0.085300
PPUPRM             -0.018200       -0.037426       -0.059304
PSEX                0.050011        0.073437       -0.031717
PSREP               0.028234        0.009274        0.073451
TEXP                0.034275        0.048975       -0.038574
TCOND               0.227947        0.191964        0.192275
TLOC               -0.044916       -0.053128        0.237852
TSESB              -0.004745       -0.028474        0.052801
TTRNG              -0.080272       -0.063382       -0.005390
TCOLAT             -0.050520       -0.047016        0.124701
TRELAC             -0.017296       -0.029417       -0.055974
TPRHAB              0.074750        0.047674        0.076683
TSEX                0.031137        0.054765        0.008246
TRACE               0.117624        0.141575        0.215845
TSAL               -0.104736       -0.079708        0.030043
TVOCAB              0.084097        0.111803        0.191565
SSES                0.303909        0.296382        0.286445
SFSS                0.476968        0.506540        0.143015
SEXPTN              0.366720        0.398703        0.070900
SHBTS               0.435012        0.479009        0.146884
SEDPLN              0.298123        0.306028        0.110030
SATTUD              0.421230        0.447545       -0.002016
SACHV               0.269940        0.275426        0.227363
SSEX                0.293473        0.331533       -0.005132
SRACE               0.297477        0.304988        0.255620
PFNURS             -0.093580       -0.048177       -0.069830
PCOMPL              0.027287        0.056050        0.024337
PLNDAY              0.046805        0.031378        0.006723
PLGRD              -0.008023       -0.021196       -0.001709
PPTST              -0.049918       -0.038285       -0.021949
PASGN               0.000382        0.007310        0.050150
PDATTN              0.130825        0.139210        0.123285
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FACTOR ANALYSIS - MERGED DATA
THIRD GRADE
                                                                  3RD GRADE - SET 2   59
CORRELATION MATRIX       SELECTED VARIABLE

                      SFORPT           SFORST           SBIRTH

PCRED              -0.089045        -0.075266         0.021227
TCRED              -0.074402        -0.084841         0.023332
TASGN               0.026998         0.037115         0.127587
TINST               0.008905        -0.022582        -0.038060
THONOR              0.026935        -0.028026         0.055354
SNOHM               0.319049         0.301967         0.194306
SFORPT              1.000000         0.706834         0.098311
SFORST              0.706834         1.000000         0.099846
SBIRTH              0.098311         0.099846         1.000000
```

First Grade School, Teacher Aggregate and Student Aggregate Intercorrelations

The first 43 variables in the following list comprise the basic set. The number of observations (inflated using the sampling weights) should be doubled.

NO.	ACRONYM	TITLE
1	PPLNT	Physical Plant and Facilities
2	PEXP	Principal's Experience
3	PTRNG	Principal's Training
4	PCOLAT	Principal's College Attended
5	PINSTF	Instructional Facilities
6	PSPST	Specialized Staff and Services
7	PTRCK	Tracking
8	PTSTG	Testing
9	PTRNS	Transfers
10	PREMD	Remedial Programs
11	PFLUN	Free Milk and Lunch Programs
12	PACRD	Accreditation
13	PAGTXT	Age of Texts
14	PAVTXT	Availability of Texts
15	PRURUB	Rural-Urban Location of School
16	PPTRAT	Pupil Teacher Ratio
17	PENRL	Number of Students Enrolled
18	PPRSLR	Promotion Policy
19	PAGBLD	Age of Building
20	PPUPRM	Pupils Per Room
21	PSEX	Principal's Sex
22	PSREP	Principal's Estimate of School Reputation

NO.	ACRONYM	TITLE
23	TEXP	Teacher's Experience
24	TCOND	Teaching Conditions
25	TLOC	Teacher's Localism of Background
26	TSESB	Teacher's Socio-Economic Background
27	TTRNG	Teacher's Training
28	TCOLAT	Teacher's College Attended
29	TRELAC	Teaching Related Activities
30	TPRHAB	Teacher's Preference for Student Ability Level
31	TSEX	Teacher's Sex
32	TRACE	Teacher's Racial-Ethnic Group Membership
33	TSAL	Teacher' Annual Teaching Salary
34	TVOCAB	Teacher's Vocabulary Score
35	SSES	Student's Socio-Economic Status
36	SFSS	Student's Family Structure and Stability
37	SBEHVR	Student's Classroom Behavior
38	SACHV	Student's Achievement
39	SSEX	Student's Sex
40	SRACE	Student's Racial-Ethnic Group Membership
41	SKGTN	Student's Kindergarten Attendance
42	SNURSY	Student's Nursery School Attendance
43	SHD STR	Student's Attendance at Head Start
44	PSES	Principal's Estimate of Student Body's SES
45	PPTA	Principal's Estimate of PTA Attendance
46	PTURN	Teacher Turnover
47	PTENR	Teacher Tenure

NO.	ACRONYM	TITLE
48	PTEXM	Teacher Examinations
49	PWHITE	Principal's Estimate of Percent White of Student Body
50	PPROB	Principal's Estimate of School Problems
51	PNWENT	Length of Time Since Non-Whites Entered
52	PHMWK	Hours of Homework Expected
53	PHRTCH	Principal's Hours a Day Spent in Classroom Teaching
54	TWHUND	Percent White of Students at Teacher's Undergraduate Institution
55	TWHITE	Percent White of Students in Teacher's Class
56	THRTCH	Teacher's Hours a Day Spent in Classroom Teaching
57	TSIZE	Teacher's Average Class Size
58	SBIRTH	Area of Student's Birth
59	SMTRBN	Area of Student's Mother's Birth
SET 2		
44	PFNURS	Free Nursery
45	PCOMPL	Compulsory School Attendance Law
46	PLNDAY	Length of School Day
47	PLGRD	Courses from Different Teachers
48	PPTST	Percent of Students in Part-Time Attendance
49	PASGN	Pupil Assignment
50	PDATTN	Percent Daily Attendance
51	PCRED	Principal's Credits Beyond Highest Degree
52	TCRED	Teacher's Credits Beyond Highest Degree
53	TASGN	Teacher's Assignment to Present School

NO.	ACRONYM	TITLE
54	TINST	Teacher Attends Summer Institutes
55	THONOR	Teacher Member National Honorary
56	SNOHM	Number of Older Siblings Living at Home
57	SFORPT	Student's Parents Speak a Foreign Language
58	SFORST	Student Speaks a Foreign Language Outside of School
59	SREPT	Students Repeating the First Grade

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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                  1ST GRADE - SET 1  59

SELECTED VARIABLE


THE NUMBER OF OBSERVATIONS IS       30385.

VARIABLE        SUMS          SUMS OF SQUARES          MEAN          SIGMA(N)       SIGMA(N-1)
PPLNT       -11199.1344        229814.3047           -0.3686          2.7254          2.7254
PEXP          3474.7300        149655.5508            0.1144          2.2164          2.2164
PTRNG        -4911.5575         56710.5757           -0.1616          1.3566          1.3566
PCOLAT        -554.9148         50560.2441           -0.0183          1.2898          1.2898
PINSTF      -67197.1240        489648.4219           -2.2115          3.3502          3.3503
PSPST       -27290.3550        216235.7031           -0.8982          2.5119          2.5120
PTRCK        -8489.0144        220946.1504           -0.2794          2.6821          2.6821
PTSTG         5319.0335         51276.1724            0.1751          1.2872          1.2872
PTRNS         3899.2865         89456.7676            0.1283          1.7110          1.7111
PREMD        -9602.3044         50751.8940           -0.3160          1.2532          1.2532
PFLUN         1393.0179         71960.6748            0.0458          1.5382          1.5383
PACRD         -898.3436         75821.9541           -0.0296          1.5794          1.5794
PAGTXT        1033.6982         39588.7544            0.0340          1.1409          1.1410
PAVTXT       -2692.5398         34085.8311           -0.0886          1.0554          1.0555
PRURUB         729.8798         32307.1748            0.0240          1.0309          1.0309
PPTRAT        7001.4928         30019.4568            0.2304          0.9669          0.9669
PENRL        -6453.6192         17158.9631           -0.2124          0.7208          0.7209
PPRSLR       -2621.1733         29675.0520           -0.0863          0.9845          0.9845
PAGBLD         290.5625         30524.6467            0.0096          1.0023          1.0023
PPUPRM        2802.7475         71456.6221            0.0922          1.5308          1.5308
PSEX          3049.2285         34845.5552            0.1004          1.0662          1.0662
PSREP        -1291.2797         30403.9524           -0.0425          0.9994          0.9994
TEXP         26909.6003        101909.8955            0.8856          1.6030          1.6030
TCOND        11773.2190        124663.4082            0.3875          1.9881          1.9882
TLOC        -10780.8303         60477.3916           -0.3548          1.3655          1.3655
TSESB       -16704.1853         44360.7861           -0.5498          1.0760          1.0760
TTRNG       -27040.7344         68068.1318           -0.8899          1.2034          1.2034
TCOLAT      -30652.3528         65289.6943           -1.0088          1.0635          1.0635
TRELAC       -3839.1129         12373.0343           -0.1263          0.6255          0.6255
TPRHAB      -15333.4227         16685.2410           -0.5046          0.5427          0.5427
TSEX         26105.2173         24780.8337            0.8592          0.2783          0.2783
TRACE         3941.0601         38704.1270            0.1297          1.1211          1.1212
TSAL        -13447.6047         20795.1326           -0.4426          0.6989          0.6990
TVOCAB       -7920.8505         18467.4019           -0.2607          0.7347          0.7347
SSES            15.7671         51232.2568            0.0005          1.2985          1.2985
SFSS         -1732.3487         11716.6296           -0.0570          0.6183          0.6184
SBEHVR        -326.0790         63105.5752           -0.0107          1.4411          1.4411
SACHV         -199.4589         38133.2393           -0.0066          1.1203          1.1203
SSEX          1419.7710          2563.7836            0.0467          0.2867          0.2867
SRACE         2297.6691         20239.4734            0.0756          0.8126          0.8127
SKGTN        -5285.0010         18983.3621           -0.1739          0.7710          0.7711
SNURSY       -3442.4256          4851.8173           -0.1133          0.3832          0.3832
SHDSTR        -957.0192         15255.2551           -0.0315          0.7079          0.7079
PSES          -692.9790         30256.0825           -0.0228          0.9976          0.9976
PPTA          3407.8198         31035.9087            0.1122          1.0044          1.0044
PTURN        -1229.0355         26919.2878           -0.0404          0.9404          0.9404
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                          1ST GRADE - SET 1  59

SELECTED VARIABLE


THE NUMBER OF OBSERVATIONS IS       30385.

VARIABLE          SUMS          SUMS OF SQUARES          MEAN            SIGMA(N)          SIGMA(N-1)
PTENR            49.1446          30102.7461            0.0016            0.9953             0.9954
PTEXM          -360.2629          29238.5750           -0.0119            0.9809             0.9809
PWHITE        -2217.4501          33079.1450           -0.0730            1.0408             1.0409
PPROB         -3906.8876          27979.9197           -0.1286            0.9510             0.9510
PNWENT         -679.9311          26869.0339           -0.0224            0.9401             0.9401
PHMWK         -9641.5157          25394.9607           -0.3173            0.8574             0.8574
PHRTCH         1882.7383          31217.4158            0.0620            1.0117             1.0117
TWHUND        -2716.5287          31053.2781           -0.0894            1.0070             1.0070
TWHITE         -760.7014          28869.3894           -0.0250            0.9744             0.9744
THRTCH       -40710.9634          55354.2178           -1.3398            0.1631             0.1631
TSIZE            60.4949           9209.9762            0.0020            0.5506             0.5506
SBIRTH          727.4402           7079.8261            0.0239            0.4821             0.4821
SMTRBN          588.4089           2502.6020            0.0194            0.2863             0.2863
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                     1ST GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE

                    PPLNT          PEXP          PTRNG         PCOLAT        PINSTF         PSPST         PTRCK

PPLNT            1.000000     -0.021907      0.252148      0.058316      0.375203      0.242034      0.016712
PEXP            -0.021907      1.000000     -0.047347     -0.063150     -0.023045     -0.103520      0.034676
PTRNG            0.252148     -0.047347      1.000000      0.164115      0.151626      0.552791      0.059701
PCOLAT           0.058316     -0.063150      0.164115      1.000000      0.060779      0.105909      0.048037
PINSTF           0.375203     -0.023045      0.151626      0.060779      1.000000      0.122846      0.025130
PSPST            0.242034     -0.103520      0.552791      0.105909      0.122846      1.000000      0.048089
PTRCK            0.016712      0.034676      0.059701      0.048037      0.025130      0.048089      1.000000
PTSTG            0.145606      0.044728     -0.000206     -0.009710      0.363076      0.059507      0.068146
PTRNS           -0.000935     -0.007923      0.279839      0.143986     -0.033613      0.203611     -0.018454
PREMD            0.026687     -0.068171      0.120101      0.095710      0.098361      0.150690      0.180948
PFLUN            0.039143      0.054858     -0.179705     -0.046946      0.104241     -0.180551      0.019868
PACRD            0.037625     -0.057418      0.091708      0.035838      0.051023      0.150164     -0.005440
PAGTXT          -0.115947      0.130776     -0.055138     -0.028663      0.003123     -0.074244     -0.052971
PAVTXT           0.014143      0.000087     -0.061721     -0.035983     -0.005556     -0.006008     -0.063806
PRURUB          -0.058258     -0.020173      0.466127      0.095077     -0.104237      0.383834      0.073343
PPTRAT          -0.156455      0.050111      0.082715      0.015437     -0.239972      0.073290      0.019893
PENRL            0.315480      0.086867      0.436054      0.102513      0.271320      0.497756      0.081254
PPRSLR          -0.013057      0.022639      0.029877      0.015502     -0.066898     -0.018937      0.004124
PAGBLD          -0.313127      0.005363     -0.114473     -0.062210      0.031225     -0.048009     -0.099445
PPUPRM          -0.023614      0.062844      0.088278     -0.004454     -0.022127      0.140208      0.034653
PSEX            -0.286213      0.196049     -0.251380     -0.087709     -0.210213     -0.149798     -0.024193
PSREP            0.196589      0.087810      0.122630      0.022454     -0.016896      0.144054      0.102277
TEXP            -0.022945      0.207566     -0.206668     -0.087795      0.044341     -0.278176     -0.050741
TCOND            0.140493     -0.061393      0.008215     -0.019179     -0.042666      0.052593     -0.025670
TLOC             0.110838     -0.140963      0.197947      0.184763      0.048819      0.141345      0.059502
TSESB            0.083790     -0.093234      0.314623      0.156036     -0.083623      0.354318      0.016898
TTRNG            0.100026      0.067560      0.544784      0.112674     -0.021534      0.479593     -0.010396
TCOLAT           0.099749     -0.120704      0.277773      0.278583      0.047562      0.252058     -0.041861
TRELAC           0.003724      0.053834     -0.039555     -0.031861     -0.008445     -0.083417      0.033054
TPRHAB           0.169008     -0.078144      0.181460      0.052308      0.007856      0.165136     -0.005114
TSEX            -0.074909      0.042625     -0.294902     -0.005038     -0.136436     -0.220492     -0.025998
TRACE            0.074755     -0.190597      0.039035      0.085450     -0.015854      0.127631     -0.114354
TSAL             0.053061     -0.036518      0.600571      0.151509     -0.044713      0.564734     -0.007847
TVOCAB           0.066538     -0.154820      0.213938      0.095924     -0.000628      0.265019     -0.086888
SSES             0.171580     -0.107560      0.167989      0.034833      0.012602      0.251437     -0.090250
SFSS             0.069962     -0.142563      0.021499      0.017494     -0.047648      0.097125     -0.079796
SBEHVR          -0.006017     -0.128834      0.015519      0.014262      0.006264      0.045663     -0.077395
SACHV            0.085243     -0.138287      0.062487      0.015517     -0.036232      0.158609     -0.052988
SSEX            -0.035944     -0.001332     -0.065179      0.025874     -0.000529     -0.048295      0.040184
SRACE            0.080934     -0.186927     -0.040764      0.030183     -0.029714      0.068626     -0.101077
SKGTN           -0.089724     -0.137383      0.393555      0.069408     -0.055899      0.481530     -0.008133
SNURSY           0.119117     -0.023935      0.323144      0.001482     -0.071774      0.302511      0.024927
SHDSTR           0.051174     -0.158182      0.146031      0.074674     -0.008872      0.231476     -0.092879
PSES             0.124363     -0.018964      0.315989      0.068151     -0.089720      0.350803      0.084135
PPTA             0.070654      0.054004      0.020246     -0.013646     -0.067406     -0.000376      0.085149
PTURN            0.030362     -0.158138      0.042948      0.046636      0.096136     -0.069728     -0.017701
PTENR           -0.040538      0.006338      0.286333      0.037952     -0.019590      0.254655     -0.013725
PTEXM           -0.023908      0.071790      0.027143     -0.001449     -0.059965     -0.005459      0.099968
PWHITE           0.064181     -0.193569     -0.040909      0.031042     -0.058884      0.070340     -0.108613
PPROB            0.067889     -0.006044      0.176115      0.064528      0.214347      0.105209      0.045079
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE
                                                                1ST GRADE - SET 1  59
CORRELATION MATRIX      SELECTED VARIABLE

                   PPLNT          PEXP          PTRNG         PCOLAT        PINSTF         PSPST         PTRCK

PNWENT          -0.099080      0.030668      0.275748      0.033675     -0.022473      0.237376     -0.038177
PHMWK            0.161985      0.073572     -0.130786     -0.019634      0.384291     -0.162110      0.120356
PHRTCH          -0.292569      0.008612     -0.558747     -0.114407     -0.137822     -0.402318     -0.053904
TWHUND           0.051176     -0.185832      0.036889      0.080748     -0.022613      0.110648     -0.108666
TWHITE           0.056624     -0.175076     -0.059732      0.033530     -0.057035      0.056952     -0.122481
THRTCH          -0.082534     -0.108028      0.276402      0.043774     -0.068260      0.329111      0.019068
TSIZE            0.095720     -0.021610      0.264838      0.043790     -0.060996      0.228250     -0.014873
SBIRTH           0.110177     -0.102901      0.019937      0.084042      0.099224      0.051645     -0.060772
SMTRBN           0.010591      0.032116     -0.104258      0.004290      0.031127     -0.056573     -0.009131
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                                1ST GRADE - SET 1   59

CORRELATION MATRIX       SELECTED VARIABLE

                      PTSTG          PTRNS          PREMD          PFLUN          PACRD         PAGTXT         PAVTXT

PPLNT              0.145606      -0.000935       0.026687       0.039143       0.037625      -0.115947       0.014143
PEXP               0.044728      -0.007923      -0.068171       0.054858      -0.057418       0.130776       0.000087
PTRNG             -0.000206       0.279839       0.120101      -0.179705       0.091708      -0.055138      -0.061721
PCOLAT            -0.009710       0.143986       0.095710      -0.046946       0.035838      -0.028663      -0.035983
PINSTF             0.363076      -0.033613       0.098361       0.104241       0.051023       0.003123      -0.005556
PSPST              0.059507       0.203611       0.150690      -0.180551       0.150164      -0.074244      -0.006008
PTRCK              0.068146      -0.018454       0.180948       0.019868      -0.005443      -0.052971      -0.063806
PTSTG              1.000000      -0.071797       0.061895       0.088616       0.127284       0.002315      -0.011922
PTRNS             -0.071797       1.000000       0.087156      -0.050963       0.103815      -0.000529      -0.078154
PREMD              0.061895       0.087156       1.000000       0.021256       0.048606      -0.009867      -0.056570
PFLUN              0.088616      -0.050963       0.021256       1.000000       0.020391      -0.048966       0.002147
PACRD              0.127284       0.103815       0.048606       0.020391       1.000000      -0.011950       0.116119
PAGTXT             0.002315      -0.000529      -0.009867      -0.048966      -0.011950       1.000000      -0.080381
PAVTXT            -0.011922      -0.078154      -0.056570       0.002147       0.116119      -0.080381       1.000000
PRURUB            -0.073358       0.317479       0.055605      -0.197646       0.115301       0.008837      -0.069251
PPTRAT            -0.191395       0.065767      -0.014262      -0.147967      -0.144037       0.013738      -0.130751
PENRL              0.066817       0.241941       0.053325      -0.067980       0.002138      -0.025066      -0.126435
PPRSLR            -0.033662       0.049902      -0.022637      -0.032860      -0.068757      -0.029306      -0.008560
PAGBLD            -0.009389      -0.059637      -0.023862       0.048171       0.027631       0.069277       0.023309
PPUPRM            -0.085844       0.156707       0.059169      -0.051931       0.030755      -0.037977      -0.036633
PSEX              -0.065312      -0.014927      -0.120289      -0.001932       0.084926       0.134752      -0.009583
PSREP              0.019495      -0.004291      -0.001768      -0.101287       0.113112      -0.109627       0.036341
TEXP              -0.005293      -0.205805      -0.028242       0.097615      -0.065589       0.019326       0.101479
TCOND             -0.029644      -0.130135      -0.078835      -0.162689       0.028580      -0.039782       0.095919
TLOC              -0.003451       0.308723       0.091553      -0.032784       0.070706      -0.044234      -0.029872
TSESB             -0.014641       0.267412       0.037657      -0.199848       0.097378      -0.074110      -0.058335
TTRNG             -0.006698       0.233866       0.076994      -0.156640       0.064773      -0.012033      -0.082891
TCOLAT             0.026252       0.254634       0.011242      -0.035295       0.148218      -0.057733       0.013262
TRELAC            -0.004043      -0.031594       0.031668       0.016544      -0.133759       0.040160      -0.033825
TPRHAB            -0.016230       0.112311       0.002984      -0.093230       0.066368       0.024230       0.031987
TSEX              -0.044812      -0.068464      -0.023142       0.015260      -0.126810       0.036006       0.009512
TRACE             -0.035105       0.091919       0.003196      -0.068840       0.241477      -0.043537       0.140518
TSAL              -0.061942       0.319175       0.067131      -0.158424       0.160731      -0.071852      -0.028487
TVOCAB            -0.001370       0.152208      -0.020623      -0.085373       0.241798      -0.085504       0.145746
SSES              -0.007531       0.008649      -0.015307      -0.217194       0.135232      -0.042756       0.123458
SFSS              -0.056128      -0.081517      -0.029493      -0.087439       0.163031      -0.007905       0.219479
SBEHVR            -0.068633      -0.038066      -0.086986      -0.026292       0.069695       0.022243       0.116345
SACHV             -0.049471      -0.087207      -0.054863      -0.128910       0.177811      -0.038024       0.162146
SSEX               0.033118       0.026648      -0.013344       0.067245      -0.018322      -0.002338      -0.049396
SRACE             -0.035556      -0.069309      -0.037229      -0.107363       0.197948      -0.029060       0.151989
SKGTN             -0.010156       0.137446       0.050283      -0.238131       0.140663      -0.050693       0.043797
SNURSY            -0.068706       0.153936       0.005083      -0.150146       0.008783      -0.013109      -0.003129
SHDSTR            -0.046523       0.062833       0.025718      -0.191953       0.058632      -0.085592       0.057315
PSES              -0.012300       0.095233       0.026197      -0.200347       0.094730      -0.017861       0.007868
PPTA               0.028247       0.004820      -0.023028      -0.054628      -0.070813      -0.079747       0.064687
PTURN             -0.025138       0.142455       0.004326      -0.031096      -0.020945       0.056098       0.045607
PTENR             -0.024829       0.121917       0.008143      -0.047768       0.183281       0.042106      -0.057054
PTEXM             -0.045675      -0.003404       0.014745       0.026900      -0.232987       0.038556      -0.052463
PWHITE            -0.045837      -0.039662      -0.061144      -0.182807       0.191080      -0.044934       0.114888
PPROB              0.005557       0.208138       0.156018       0.054111      -0.025617      -0.001085      -0.169329
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                                1ST GRADE - SET 1  59

CORRELATION MATRIX      SELECTED VARIABLE

                   PTSTG          PTRNS          PREMD          PFLUN          PACRD          PAGTXT         PAVTXT

PNWENT          -0.044549       0.313499       0.079425      -0.055451       0.087021       0.034522      -0.044392
PHMWK            0.209367      -0.167518       0.068692       0.091751      -0.095877      -0.022613      -0.026664
PHRTCH           0.017371      -0.201293      -0.072062       0.150770      -0.034412       0.072629       0.050295
TWHUND          -0.022286       0.081442       0.009891      -0.031065       0.259059      -0.044251       0.148139
TWHITE          -0.040648      -0.068282      -0.070168      -0.176435       0.188368      -0.015016       0.146151
THRTCH          -0.011715       0.170637       0.045982      -0.152546       0.037019       0.020667      -0.000269
TSIZE           -0.014047       0.141927       0.008151      -0.085044       0.132960      -0.047895       0.050493
SBIRTH           0.073614       0.157571       0.001433       0.032275       0.043890      -0.010684       0.050309
SMTRBN           0.008803      -0.096993      -0.008570      -0.071825      -0.023906       0.021801       0.042568
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                    1ST GRADE - SET 1  59

CORRELATION MATRIX      SELECTED VARIABLE

                   PRURUB       PPTRAT        PENRL       PPRSLR       PAGBLD       PPUPRM         PSEX

PPLNT           -0.058258    -0.156455     0.315480    -0.013057    -0.313127    -0.023614    -0.286213
PEXP            -0.020173     0.050111     0.086867     0.022639     0.005363     0.062844     0.196049
PTRNG            0.466127     0.082715     0.436054     0.029877    -0.114473     0.088278    -0.251380
PCOLAT           0.095077     0.015437     0.102513     0.015502    -0.062210    -0.004464    -0.087709
PINSTF          -0.104237    -0.239972     0.271320    -0.066898     0.031225    -0.022127    -0.210213
PSPST            0.383834     0.073290     0.497756    -0.018937    -0.048009     0.140208    -0.149798
PTRCK            0.073343     0.019893     0.081254     0.004124    -0.099445     0.034653    -0.024193
PTSTG           -0.073358    -0.191395     0.066817    -0.033662    -0.009389    -0.085844    -0.065312
PTRNS            0.317479     0.065767     0.241941     0.049902    -0.059637     0.156707    -0.014927
PREMD            0.055605    -0.014262     0.053325    -0.022637    -0.023862     0.059169    -0.120289
PFLUN           -0.197646    -0.147967    -0.067980    -0.032860     0.048171    -0.051931    -0.001932
PACRD            0.115301    -0.144037     0.002138    -0.068757     0.027631     0.030755     0.084926
PAGTXT           0.008837     0.013738    -0.025066    -0.029306     0.069277    -0.037977     0.134752
PAVTXT          -0.069251    -0.130751    -0.126435    -0.008560     0.023309    -0.036633    -0.009583
PRURUB           1.000000     0.230227     0.371502     0.039294     0.101220     0.129614     0.061202
PPTRAT           0.230227     1.000000     0.284336     0.010807    -0.034209     0.238347     0.076482
PENRL            0.371502     0.284336     1.000000     0.023670    -0.127855     0.196605    -0.131918
PPRSLR           0.039294     0.010807     0.023670     1.000000    -0.038802    -0.040405     0.047521
PAGBLD           0.101220    -0.034209    -0.127855    -0.038802     1.000000    -0.074373     0.144380
PPUPRM           0.129614     0.238347     0.196605    -0.040405    -0.074373     1.000000    -0.022549
PSEX             0.061202     0.076482    -0.131918     0.047521     0.144380    -0.022549     1.000000
PSREP            0.152489     0.032268     0.061158    -0.015810    -0.157152    -0.029498     0.045414
TEXP            -0.242419    -0.048538    -0.155564    -0.062930     0.187222    -0.036977     0.038104
TCOND           -0.036910    -0.030638    -0.073385    -0.031047    -0.137467    -0.084899     0.000594
TLOC             0.069527    -0.062267     0.040170     0.129869    -0.224948     0.031344    -0.120109
TSESB            0.388142     0.155773     0.201540     0.036399    -0.067917     0.093402    -0.056449
TTRNG            0.398824     0.122472     0.258772     0.006436    -0.013167     0.121057    -0.084720
TCOLAT           0.148126    -0.019973     0.144716     0.094134    -0.090337     0.052846    -0.077739
TRELAC          -0.059662     0.070438    -0.011863     0.049978    -0.090244     0.033040     0.049321
TPRHAB           0.148490     0.062483     0.140526     0.032422    -0.032075    -0.009535     0.009112
TSEX            -0.093867     0.001129    -0.115800    -0.075395     0.061764    -0.009693     0.133228
TRACE           -0.020573    -0.121598    -0.092529     0.082741     0.071480    -0.018145    -0.034083
TSAL             0.416659     0.086794     0.237537     0.066688     0.010028     0.122809    -0.023944
TVOCAB           0.159355    -0.089868     0.033528     0.055424     0.066100    -0.015602    -0.058239
SSES             0.096509    -0.090137     0.030645     0.070157    -0.028125    -0.050542    -0.026725
SFSS            -0.041233    -0.113361    -0.136135     0.043149     0.001535    -0.052679    -0.019011
SBEHVR          -0.025167     0.019915    -0.048275     0.039358     0.038245    -0.072750    -0.003936
SACHV            0.022240    -0.143934    -0.109028     0.061226     0.011671    -0.099103    -0.032271
SSEX            -0.094180     0.011072    -0.032851     0.013360    -0.020511    -0.007708     0.058260
SRACE           -0.088740    -0.112448    -0.155061     0.053436     0.048468    -0.082854    -0.020744
SKGTN            0.413165     0.088463     0.187152     0.063207     0.102337     0.082784     0.014643
SNURSY           0.314646     0.085149     0.170338    -0.003720    -0.069863     0.038999    -0.064799
SHDSTR           0.125965    -0.027110     0.023307     0.029995    -0.013896     0.018125    -0.027842
PSES             0.336796     0.206395     0.279546    -0.028268    -0.092456     0.026981    -0.092851
PPTA             0.026705    -0.026782    -0.036717     0.007687    -0.047808    -0.064331     0.059563
PTURN           -0.047229    -0.114202    -0.033884     0.033205    -0.025594    -0.009487    -0.104126
PTENR            0.199741     0.093411     0.083172    -0.010065     0.078868     0.032400     0.033092
PTEXM            0.183581     0.085395     0.139618    -0.041267     0.011467     0.011379     0.042609
PWHITE          -0.073001    -0.099031    -0.161395     0.088756     0.029487    -0.094011     0.022070
PPROB            0.152534     0.014965     0.225828    -0.036567     0.001340     0.127390    -0.096119
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                     1ST GRADE - SET 1  59

CORRELATION MATRIX      SELECTED VARIABLE

                    PRURUB         PPTRAT          PENRL         PPRSLR         PAGBLD         PPUPRM           PSEX

PNWENT            0.167692      -0.024652       0.127417       0.071263       0.112127       0.078963      -0.067383
PHMWK            -0.338277      -0.104262       0.039753      -0.073639       0.003887      -0.038139      -0.147460
PHRTCH           -0.423832      -0.143825      -0.503200      -0.041945       0.105143      -0.068977       0.190001
TWHUND            0.000960      -0.117934      -0.090911       0.083553       0.098373      -0.017505      -0.011753
TWHITE           -0.085917      -0.093564      -0.167662       0.047329       0.033523      -0.088231      -0.000127
THRTCH            0.270945       0.070260       0.152109       0.051747       0.084316       0.058837      -0.015006
TSIZE             0.185980       0.015097       0.099544       0.049662      -0.082472       0.055279      -0.088754
SBIRTH           -0.165141      -0.187971      -0.064537       0.011990      -0.168434      -0.082940      -0.125475
SMTRBN           -0.113775      -0.034150      -0.108110       0.006276      -0.021635      -0.061589       0.087152
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                    1ST GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE

                      PSREP          TEXP          TCOND          TLOC          TSESB          TTRNG         TCOLAT

PPLNT              0.196589     -0.022945      0.140493      0.110838      0.083790      0.100026      0.099749
PEXP               0.087810      0.207566     -0.061393     -0.140963     -0.093234      0.067560     -0.120704
PTRNG              0.122630     -0.206668      0.008215      0.197947      0.314623      0.544784      0.277773
PCOLAT             0.022454     -0.087795     -0.019179      0.184763      0.156036      0.112674      0.278583
PINSTF            -0.016896      0.044341     -0.042666      0.048819     -0.083623     -0.021534      0.047562
PSPST              0.144054     -0.278176      0.052593      0.141345      0.354318      0.479593      0.252058
PTRCK              0.102277     -0.050741     -0.025670      0.059502      0.016898     -0.010396     -0.041861
PTSTG              0.019495     -0.005293     -0.029644     -0.003451     -0.014641     -0.006698      0.026252
PTRNS             -0.004291     -0.205805     -0.130135      0.308723      0.267412      0.233866      0.254634
PREMD             -0.001768     -0.028242     -0.078835      0.091553      0.037657      0.076994      0.011242
PFLUN             -0.101287      0.097615     -0.162689     -0.032784     -0.199848     -0.156640     -0.035295
PACRD              0.113112     -0.065589      0.028580      0.070706      0.097378      0.064773      0.148218
PAGTXT            -0.109627      0.019326     -0.039782     -0.044234     -0.074110     -0.012033     -0.057733
PAVTXT             0.036341      0.101479      0.095919     -0.029872     -0.058335     -0.082891      0.013262
PRURUB             0.152489     -0.242419     -0.036910      0.069527      0.388142      0.398824      0.148126
PPTRAT             0.032268     -0.048538     -0.030638     -0.062267      0.155773      0.122472     -0.019973
PENRL              0.061158     -0.155564     -0.073385      0.040170      0.201540      0.258772      0.144716
PPRSLR            -0.015810     -0.062930     -0.031047      0.129869      0.036399      0.006436      0.094134
PAGBLD            -0.157152      0.187222     -0.137467     -0.224948     -0.067917     -0.013167     -0.090337
PPUPRM            -0.029498     -0.036977     -0.084899      0.031344      0.093402      0.121057      0.052846
PSEX               0.045414      0.038104      0.000594     -0.120109     -0.056449     -0.084720     -0.077739
PSREP              1.000000     -0.023289      0.359420      0.018788      0.180478      0.147225      0.075858
TEXP              -0.023289      1.000000      0.007715     -0.326430     -0.422764      0.018161     -0.228071
TCOND              0.359420      0.007715      1.000000      0.005790      0.179441      0.108490      0.147331
TLOC               0.018788     -0.326430      0.005790      1.000000      0.290706      0.170716      0.288103
TSESB              0.180478     -0.422764      0.179441      0.290706      1.000000      0.314449      0.365687
TTRNG              0.147225      0.018161      0.108490      0.170716      0.314449      1.000000      0.256200
TCOLAT             0.075858     -0.228071      0.147331      0.288103      0.365687      0.256200      1.000000
TRELAC             0.021579      0.093473     -0.012707      0.056089     -0.054603      0.046842     -0.082802
TPRHAB             0.203281     -0.041026      0.326974      0.122497      0.322759      0.195796      0.164494
TSEX              -0.025665      0.172767      0.031913     -0.146192      0.079991     -0.125054     -0.010830
TRACE              0.122211     -0.065504      0.342240      0.125466      0.320861     -0.001400      0.374519
TSAL               0.142020     -0.132388      0.110544      0.296793      0.414355      0.813682      0.356507
TVOCAB             0.106508     -0.139931      0.277685      0.192637      0.413063      0.262787      0.433599
SSES               0.233584     -0.126286      0.579515      0.120545      0.295643      0.158785      0.271646
SFSS               0.123330     -0.127565      0.401322      0.093119      0.227319      0.017584      0.204008
SBEHVR             0.047658     -0.038696      0.364947     -0.022190      0.035806      0.005968      0.131239
SACHV              0.176098     -0.054536      0.502593      0.142125      0.134012      0.106088      0.171537
SSEX              -0.016605      0.040365     -0.015466     -0.038796     -0.100704     -0.087962      0.019205
SRACE              0.171740     -0.042718      0.495393      0.069596      0.244919     -0.055737      0.294793
SKGTN              0.094485     -0.309449      0.211731      0.104537      0.360727      0.375858      0.315861
SNURSY             0.213746     -0.163187      0.258184      0.143144      0.323866      0.378379      0.153200
SHDSTR             0.047239     -0.153363      0.256325      0.078654      0.234850      0.149489      0.234517
PSES               0.284591     -0.164266      0.328886      0.113404      0.393368      0.291598      0.158368
PPTA               0.174900     -0.026633      0.270176     -0.009116      0.031826      0.012711      0.003032
PTURN             -0.125989     -0.204379     -0.066338      0.228719      0.066712     -0.073671      0.138547
PTENR              0.007880     -0.106854     -0.013654      0.036273      0.162494      0.372206      0.108040
PTEXM             -0.010061      0.033325     -0.108086     -0.169846     -0.004864     -0.034771     -0.127030
PWHITE             0.179139     -0.029808      0.490454      0.091408      0.233251     -0.068283      0.271816
PPROB             -0.101020     -0.038814     -0.303386      0.055096      0.059426      0.111639      0.066848
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                   1ST GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE

                    PSREP         TEXP          TCOND         TLOC          TSESB         TTRNG         TCOLAT

PNWENT           -0.083557     -0.080707     -0.153579      0.112401      0.165745      0.268870      0.203754
PHMWK            -0.100822      0.230892     -0.090561     -0.151065     -0.295766     -0.212347     -0.160101
PHRTCH           -0.160577      0.180278     -0.060220     -0.160758     -0.294416     -0.334143     -0.175330
TWHUND            0.121097     -0.033478      0.313280      0.123503      0.295354     -0.023888      0.366174
TWHITE            0.165692     -0.003734      0.524832      0.022260      0.226452     -0.067518      0.253062
THRTCH           -0.026165     -0.180875     -0.023403      0.124502      0.279797      0.274516      0.170276
TSIZE             0.133277     -0.210842      0.147349      0.124549      0.267703      0.255461      0.134075
SBIRTH            0.046696     -0.111325      0.144582      0.399200      0.123429      0.003105      0.225532
SMTRBN            0.048214      0.107730      0.143765      0.056454     -0.084483     -0.016035     -0.037108
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                   1ST GRADE - SET 1  59

CORRELATION MATRIX       SELECTED VARIABLE
                    TRELAC       TPRHAB        TSEX        TRACE         TSAL       TVOCAB        SSES

PPLNT             0.003724     0.169008    -0.074909     0.074755     0.053061     0.066538     0.171580
PEXP              0.053834    -0.078144     0.042625    -0.190597    -0.036518    -0.154820    -0.107560
PTRNG            -0.039555     0.181460    -0.294902     0.039035     0.600571     0.213938     0.167989
PCOLAT           -0.031861     0.052308    -0.005038     0.085460     0.151509     0.095924     0.034833
PINSTF           -0.008445     0.007856    -0.136436    -0.015854    -0.044713    -0.000628     0.012602
PSPST            -0.083417     0.165136    -0.220492     0.127631     0.564734     0.265019     0.251437
PTRCK             0.033054    -0.005114    -0.025998    -0.114354    -0.007847    -0.086888    -0.090250
PTSTG            -0.004043    -0.016230    -0.044812    -0.035105    -0.061942    -0.001370    -0.007531
PTRNS            -0.031594     0.112311    -0.068464     0.091919     0.319175     0.152208     0.008649
PREMD             0.031668     0.002984    -0.023142     0.003196     0.067131    -0.020623    -0.015307
PFLUN             0.016544    -0.093230     0.015263    -0.068840    -0.158424    -0.085373    -0.217194
PACRD            -0.133759     0.066368    -0.126810     0.241477     0.160731     0.241798     0.135252
PAGTXT            0.040160     0.024230     0.036006    -0.043537    -0.071852    -0.085504    -0.042756
PAVTXT           -0.033825     0.031987     0.009512     0.140518    -0.028487     0.145746     0.123458
PRURUB           -0.059662     0.148490    -0.093867    -0.020573     0.416659     0.159355     0.096509
PPTRAT            0.070438     0.052483     0.001129    -0.121598     0.086794    -0.089868    -0.090137
PENRL            -0.011863     0.140526    -0.115800    -0.092529     0.237537     0.033528     0.030645
PPRSLR            0.049978     0.032422    -0.075395     0.082741     0.066688     0.055424     0.070137
PAGBLD           -0.090244    -0.032075     0.061764     0.071480     0.010028     0.066100    -0.028125
PPUPRM            0.033040    -0.009535    -0.009693    -0.018145     0.122809    -0.015602    -0.050542
PSEX              0.049321     0.009112     0.133228    -0.034083    -0.023944    -0.058239    -0.026725
PSREP             0.021579     0.203281    -0.025665     0.122211     0.142020     0.106508     0.233584
TEXP              0.093473    -0.041026     0.172767    -0.065504    -0.132388    -0.139931    -0.126286
TCOND            -0.012707     0.326974     0.031913     0.342240     0.110544     0.277685     0.579515
TLOC              0.056089     0.122497    -0.146192     0.125466     0.296793     0.192637     0.120545
TSESB            -0.054603     0.322759     0.079991     0.320861     0.414355     0.413063     0.295643
TTRNG             0.046842     0.195796    -0.125054    -0.001400     0.813682     0.262787     0.158785
TCOLAT           -0.082802     0.164494    -0.010830     0.374519     0.356507     0.433599     0.271646
TRELAC            1.000000    -0.049090     0.141021    -0.341159    -0.014067    -0.248489    -0.144439
TPRHAB           -0.049090     1.000000    -0.011456     0.361105     0.217287     0.340965     0.344951
TSEX              0.141021    -0.011456     1.000000    -0.027313    -0.184903    -0.008924    -0.096556
TRACE            -0.341159     0.361105    -0.027313     1.000000     0.159622     0.673796     0.537303
TSAL             -0.014067     0.217287    -0.184903     0.159622     1.000000     0.395839     0.228492
TVOCAB           -0.248489     0.340965    -0.008924     0.673796     0.395839     1.000000     0.457894
SSES             -0.144439     0.344951    -0.096556     0.537303     0.228492     0.457894     1.000000
SFSS             -0.158817     0.265004    -0.013308     0.577731     0.156066     0.411789     0.444931
SBEHVR           -0.061962     0.123893    -0.003591     0.274546     0.042874     0.197268     0.362574
SACHV            -0.155105     0.293790    -0.071513     0.515776     0.163745     0.441847     0.605588
SSEX             -0.059014    -0.065254    -0.003633    -0.002530    -0.064799    -0.025037    -0.008888
SRACE            -0.284797     0.375680     0.007376     0.882802     0.067583     0.582551     0.600163
SKGTN            -0.109558     0.179018    -0.124100     0.279336     0.527866     0.388845     0.370801
SNURSY            0.030318     0.189761    -0.079245     0.057075     0.393733     0.181091     0.315875
SHDSTR           -0.154075     0.217950    -0.011768     0.392355     0.247871     0.332828     0.390244
PSES             -0.115557     0.305594    -0.135702     0.257284     0.234986     0.280122     0.400246
PPTA              0.057289     0.069875     0.023739     0.030161    -0.014831     0.022191     0.180453
PTURN            -0.035350     0.098092    -0.069195     0.091636    -0.030200     0.083182     0.027629
PTENR            -0.049242     0.105694    -0.168910     0.056579     0.412471     0.156673     0.083539
PTEXM            -0.009456    -0.024516     0.066895    -0.248424    -0.092698    -0.212302    -0.159103
PWHITE           -0.236393     0.354194     0.010804     0.812808     0.059913     0.523285     0.531288
PPROB             0.037186    -0.057657    -0.008461    -0.106906     0.111815    -0.039941    -0.163581
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                               1ST GRADE - SET 1   59

CORRELATION MATRIX       SELECTED VARIABLE

                        TRELAC          TPRHAB            TSEX           TRACE            TSAL          TVOCAB            SSES

PNWENT               -0.078504        0.011935       -0.134231        0.133843        0.340660        0.212992        0.051109
PHMWK                 0.090987       -0.139842        0.005035       -0.250627       -0.335107       -0.241980       -0.164037
PHRTCH                0.004373       -0.252720        0.094563       -0.042031       -0.318262       -0.158581       -0.123431
TWHUND               -0.337865        0.363642       -0.031550        0.952421        0.147059        0.666157        0.509936
TWHITE               -0.281305        0.370688       -0.013339        0.853031        0.032510        0.546531        0.574131
THRTCH               -0.177927        0.138192       -0.159295        0.144251        0.392529        0.224989        0.130297
TSIZE                -0.017160        0.143170       -0.059641        0.238940        0.256061        0.337994        0.194315
SBIRTH               -0.090324        0.184442       -0.037202        0.317473        0.099821        0.255213        0.275070
SMTRBN                0.072754       -0.000527        0.059180       -0.019553       -0.031616       -0.024262        0.163149
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                      1ST GRADE - SET 1  59

CORRELATION MATRIX       SELECTED VARIABLE
                      SFSS         SBEHVR          SACHV           SSEX          SRACE          SKGTN         SNURSY

PPLNT             0.069962      -0.006017       0.085243      -0.035944       0.080934      -0.089724       0.119117
PEXP             -0.142563      -0.128834      -0.138287      -0.001332      -0.186927      -0.137383      -0.023935
PTRNG             0.021499       0.015519       0.062487      -0.065179      -0.040764       0.393555       0.323144
PCOLAT            0.017494       0.014262       0.015517       0.025874       0.030183       0.069408       0.001482
PINSTF           -0.047648       0.006264      -0.036232      -0.000529      -0.029714      -0.055899      -0.071774
PSPST             0.097125       0.045663       0.158609      -0.048295       0.068626       0.481530       0.302511
PTRCK            -0.079796      -0.077395      -0.052988       0.040184      -0.101077      -0.008133       0.024927
PTSTG            -0.056129      -0.068633      -0.049471       0.033118      -0.035556      -0.010156      -0.068706
PTRNS            -0.081517      -0.038066      -0.087207       0.026648      -0.069309       0.137446       0.153936
PREMD            -0.029493      -0.086986      -0.054863      -0.013344      -0.037229       0.050283       0.005083
PFLUN            -0.087439      -0.026292      -0.128910       0.067245      -0.107363      -0.238131      -0.150146
PACRD             0.163031       0.069695       0.177811      -0.018322       0.197948       0.140663       0.008783
PAGTXT           -0.007905       0.022243      -0.038024      -0.002338      -0.029060      -0.050693      -0.013109
PAVTXT            0.219479       0.116345       0.162146      -0.049396       0.151989       0.043797      -0.003129
PRURUB           -0.041233      -0.025167       0.022240      -0.094180      -0.088740       0.413165       0.314646
PPTRAT           -0.113361       0.019915      -0.143934       0.011072      -0.112448       0.088463       0.085149
PENRL            -0.136135      -0.048275      -0.109028      -0.032851      -0.155061       0.187152       0.170338
PPRSLR            0.043149       0.039358       0.061226       0.013360       0.053436       0.063207      -0.003720
PAGBLD            0.001535       0.038245       0.011671      -0.020511       0.048468       0.102337      -0.069863
PPUPRM           -0.052679      -0.072750      -0.099103      -0.007708      -0.082854       0.082784       0.038999
PSEX             -0.019011      -0.003936      -0.032271       0.058260      -0.020744       0.014643      -0.064799
PSREP             0.123330       0.047658       0.176098      -0.016605       0.171740       0.094485       0.213746
TEXP             -0.127565      -0.038696      -0.054536       0.040365      -0.042718      -0.309449      -0.163187
TCOND             0.401322       0.364947       0.502593      -0.015466       0.495393       0.211731       0.258184
TLOC              0.093119      -0.022190       0.142125      -0.038796       0.069596       0.104537       0.143144
TSESB             0.227319       0.035806       0.134012      -0.100704       0.244919       0.360727       0.323866
TTRNG             0.017584       0.005968       0.106088      -0.087962      -0.055737       0.375858       0.378379
TCOLAT            0.204008       0.131239       0.171537       0.019205       0.294793       0.315861       0.153205
TRELAC           -0.158817      -0.061962      -0.155105      -0.059014      -0.284797      -0.109558       0.030318
TPRHAB            0.265004       0.123893       0.293790      -0.065254       0.375680       0.179018       0.189761
TSEX             -0.013308      -0.003591      -0.071513      -0.003633       0.007376      -0.124100      -0.079245
TRACE             0.577731       0.274546       0.515776      -0.002530       0.882802       0.279336       0.057075
TSAL              0.156066       0.042874       0.163745      -0.064799       0.067583       0.527866       0.393733
TVOCAB            0.411789       0.197268       0.441847      -0.025037       0.582551       0.388845       0.181091
SSES              0.444931       0.362574       0.605588      -0.008888       0.600163       0.370801       0.315875
SFSS              1.000000       0.265871       0.371444      -0.201396       0.588302       0.206919       0.179228
SBEHVR            0.265871       1.000000       0.336588       0.073555       0.334096       0.156151       0.085464
SACHV             0.371444       0.336588       1.000000       0.036980       0.564040       0.326630       0.157301
SSEX             -0.201396       0.073555       0.036980       1.000000       0.031827      -0.054357      -0.199836
SRACE             0.588302       0.334096       0.564040       0.031827       1.000000       0.224954       0.061034
SKGTN             0.206919       0.156151       0.326630      -0.054357       0.224954       1.000000       0.385376
SNURSY            0.179228       0.085464       0.157301      -0.199836       0.061034       0.385376       1.000000
SHDSTR            0.271422       0.152115       0.354120      -0.003831       0.354296       0.339666       0.105793
PSES              0.162765       0.158468       0.320620      -0.063532       0.273477       0.304364       0.339517
PPTA              0.113749       0.074007       0.133631      -0.004179       0.078305       0.022007       0.172284
PTURN             0.065112      -0.002499       0.008959       0.028776       0.061997       0.036700      -0.014822
PTENR             0.060271      -0.006702       0.080107      -0.020642       0.024187       0.305521       0.166838
PTEXM            -0.190530      -0.076100      -0.218238       0.005686      -0.230731      -0.116166       0.030225
PWHITE            0.559408       0.314381       0.534178       0.028693       0.876111       0.192017       0.035093
PPROB            -0.224412      -0.142222      -0.215403      -0.012740      -0.239176       0.010217      -0.013941
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE
                                                                        1ST GRADE - SET 1  59

CORRELATION MATRIX      SELECTED VARIABLE

                      SFSS            SBEHVR           SACHV            SSEX            SRACE            SKGTN           SNURSY

PNWENT            -0.000137        -0.040834        -0.006201        -0.070125        -0.034625         0.293106         0.147943
PHMWK             -0.191098        -0.110661        -0.167168         0.026172        -0.178602        -0.344937        -0.194738
PHRTCH            -0.029698        -0.015577        -0.051915         0.060104        -0.007618        -0.240643        -0.250506
TWHUND             0.554704         0.262673         0.487899        -0.004119         0.847756         0.257809         0.032975
TWHITE             0.585971         0.333972         0.562905         0.016198         0.920985         0.194671         0.031861
THRTCH             0.055788        -0.039250         0.041078         0.014351         0.058449         0.361154         0.195884
TSIZE              0.120420         0.079008         0.167147        -0.090072         0.202711         0.232133         0.178915
SBIRTH             0.172196         0.139336         0.252397         0.063937         0.290614         0.033234         0.058063
SMTRBN             0.089629         0.043130         0.115839        -0.016275         0.076147        -0.052883         0.048041
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                              1ST GRADE - SET 1  59

CORRELATION MATRIX       SELECTED VARIABLE
                   SHDSTR        PSES          PPTA          PTURN         PTENR         PTEXM         PWHITE

PPLNT            0.051174      0.124363      0.070654      0.030362     -0.040538     -0.023908      0.064181
PEXP            -0.158182     -0.018964      0.054004     -0.158138      0.006338      0.071790     -0.193569
PTRNG            0.146031      0.316989      0.020246      0.042948      0.286333      0.027143     -0.040909
PCOLAT           0.074674      0.068151     -0.013646      0.046636      0.037952     -0.001449      0.031042
PINSTF          -0.008872     -0.089720     -0.067406      0.096136     -0.019590     -0.059965     -0.058884
PSPST            0.231476      0.350803     -0.000376     -0.069728      0.254655     -0.005459      0.070340
PTRCK           -0.092879      0.084135      0.085149     -0.017751     -0.013725      0.099988     -0.108618
PTSTG           -0.046523     -0.012300      0.028247     -0.025138     -0.024829     -0.045675     -0.045837
PTRNS            0.062833      0.095233      0.004820      0.142455      0.121917     -0.003404     -0.039652
PREMD            0.025718      0.026197     -0.023028      0.004326      0.008143      0.014745     -0.061144
PFLUN           -0.191953     -0.200347     -0.054628     -0.031096     -0.047768      0.026900     -0.182807
PACRD            0.058632      0.094730     -0.070813     -0.020945      0.183281     -0.232987      0.191080
PAGTXT          -0.085592     -0.017861     -0.079747      0.056098      0.042106      0.038556     -0.044934
PAVTXT           0.057315      0.007868      0.064687      0.045607     -0.057064     -0.052465      0.114888
PRURUB           0.125965      0.336796      0.026705     -0.047229      0.199741      0.183581     -0.073001
PPTRAT          -0.027110      0.206395     -0.026782     -0.114202      0.093411      0.085395     -0.099031
PENRL            0.023307      0.279546     -0.036717     -0.033884      0.083172      0.139618     -0.161395
PPRSLR           0.029995     -0.028268      0.007687      0.033205     -0.010065     -0.041267      0.088756
PAGBLD          -0.013896     -0.092456     -0.047808     -0.025594      0.078868      0.011467      0.029487
PPUPRM           0.018125      0.026981     -0.064331     -0.009487      0.032400      0.011379     -0.094011
PSEX            -0.027842     -0.092851      0.059563     -0.104126      0.033092      0.042609      0.022070
PSREP            0.047239      0.284591      0.174900     -0.125989      0.007880     -0.010061      0.179139
TEXP            -0.153363     -0.164266     -0.026633     -0.204379     -0.106854      0.033325     -0.029808
TCOND            0.256325      0.328886      0.270176     -0.066338     -0.013654     -0.108086      0.490454
TLOC             0.078654      0.113404     -0.009116      0.228719      0.036273     -0.169846      0.091408
TSESB            0.234850      0.393368      0.031826      0.066712      0.162494     -0.004864      0.233251
TTRNG            0.149489      0.291598      0.012711     -0.073671      0.372206     -0.034771     -0.068283
TCOLAT           0.234517      0.158368      0.003032      0.138547      0.108040     -0.127030      0.271816
TRELAC          -0.154075     -0.115557      0.057289     -0.035350     -0.049242     -0.009456     -0.236393
TPRHAB           0.217950      0.305594      0.069875      0.098092      0.105694     -0.024516      0.354194
TSEX            -0.011768     -0.135702      0.023739     -0.069195     -0.168910      0.066895      0.010804
TRACE            0.392355      0.257284      0.030161      0.091636      0.056579     -0.248424      0.812808
TSAL             0.247871      0.234986     -0.014831     -0.030200      0.412471     -0.092698      0.059913
TVOCAB           0.332828      0.280122      0.022191      0.083182      0.156673     -0.212302      0.523285
SSES             0.390244      0.400246      0.180463      0.027629      0.083539     -0.159103      0.531283
SFSS             0.271422      0.162765      0.113749      0.065112      0.060271     -0.190530      0.559408
SBEHVR           0.152115      0.158468      0.074007     -0.002499     -0.006702     -0.076100      0.314381
SACHV            0.354120      0.320620      0.133631      0.008959      0.080107     -0.218238      0.534178
SSEX            -0.003831     -0.063532     -0.004179      0.028776     -0.020642      0.005686      0.028695
SRACE            0.354296      0.273477      0.078305      0.061997      0.024187     -0.230731      0.876111
SKGTN            0.339666      0.304364      0.022007      0.036700      0.305521     -0.116166      0.192017
SNURSY           0.105793      0.339517      0.172284     -0.014822      0.166838      0.030220      0.035093
SHDSTR           1.000000      0.126785      0.045809      0.076920      0.079302     -0.094468      0.346106
PSES             0.126785      1.000000      0.143760     -0.079357      0.141822      0.033645      0.265020
PPTA             0.045809      0.143760      1.000000      0.005475      0.009887      0.031265      0.080973
PTURN            0.076920     -0.079357      0.005475      1.000000      0.004031     -0.096628      0.030360
PTENR            0.079302      0.141822      0.009887      0.004031      1.000000     -0.053182     -0.009811
PTEXM           -0.094468      0.033645      0.031265     -0.096628     -0.053182      1.000000     -0.218211
PWHITE           0.346106      0.265020      0.080973      0.030360     -0.009811     -0.218211      1.000000
PPROB           -0.006877     -0.078095     -0.185024      0.010135      0.026828      0.052593     -0.232167
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                1ST GRADE - SET 1  59

CORRELATION MATRIX      SELECTED VARIABLE

                  SHDSTR        PSES        PPTA       PTURN       PTENR       PTEXM      PWHITE

PNWENT          0.100754    0.040971   -0.033851    0.043509    0.165479   -0.026706   -0.079108
PHMWK          -0.157025   -0.163213   -0.036214   -0.020603   -0.128014    0.030814   -0.200677
PHRTCH         -0.072101   -0.347524   -0.024183   -0.019678   -0.125405   -0.067613   -0.010612
TWHUND          0.362613    0.233353    0.017409    0.075959    0.047448   -0.238549    0.772408
TWHITE          0.346900    0.276726    0.068251    0.068933   -0.007025   -0.221502    0.897850
THRTCH          0.144886    0.180885   -0.038987   -0.051969    0.268670    0.088209    0.050834
TSIZE           0.123255    0.268829   -0.022319   -0.023402    0.127720   -0.127031    0.206290
SBIRTH          0.156630    0.111845    0.016960    0.195400   -0.024421   -0.197499    0.239807
SMTRBN          0.017163   -0.052520    0.097509   -0.045547   -0.000962   -0.080020    0.027230
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                          1ST GRADE - SET 1   59

CORRELATION MATRIX      SELECTED VARIABLE
                   PPROB        PNWENT         PHMWK        PHRTCH        TWHUND        TWHITE        THRTCH

PPLNT           0.067889     -0.099080      0.161985     -0.292569      0.051176      0.056624     -0.082534
PEXP           -0.006044      0.030668      0.073572      0.008612     -0.185832     -0.175076     -0.108028
PTRNG           0.176115      0.275748     -0.130786     -0.558747      0.036889     -0.059732      0.276402
PCOLAT          0.064528      0.033675     -0.019634     -0.114407      0.080748      0.033530      0.043774
PINSTF          0.214347     -0.022473      0.384291     -0.137822     -0.022613     -0.057035     -0.068260
PSPST           0.105209      0.237376     -0.162110     -0.402318      0.110648      0.056952      0.329111
PTRCK           0.045079     -0.038177      0.120356     -0.053904     -0.108665     -0.122481      0.019068
PTSTG           0.005557     -0.044649      0.209367      0.017371     -0.022286     -0.040648     -0.011715
PTRNS           0.208138      0.313499     -0.167518     -0.201293      0.081442     -0.068282      0.170637
PREMD           0.156018      0.079425      0.068692     -0.072062      0.009891     -0.070168   [illegible]
PFLUN           0.054111     -0.055451      0.091751      0.150770     -0.031065     -0.176435   [illegible]
PACRD          -0.025617      0.087021     -0.095877     -0.034412      0.259059      0.188368   [illegible]
PAGTXT         -0.001085      0.034522     -0.022613      0.072629     -0.044251     -0.015016   [illegible]
PAVTXT         -0.169329     -0.044392     -0.026664      0.050295      0.148139      0.146151     -0.000259
PRURUB          0.152534      0.167692     -0.338277     -0.423832      0.000960     -0.085917      0.270945
PPTRAT          0.014965     -0.024652     -0.104262     -0.143825     -0.117934     -0.093564      0.070260
PENRL           0.225828      0.127417      0.039753     -0.503200     -0.090911     -0.167662      0.152109
PPRSLR         -0.036567      0.071263     -0.073639     -0.041945      0.083553      0.047329      0.051747
PAGBLD          0.001340      0.112127      0.003887      0.105143      0.098373      0.033523      0.084316
PPUPRM          0.127390      0.078963     -0.038139     -0.068977     -0.017505     -0.088231      0.058837
PSEX           -0.096119     -0.067383     -0.147460      0.190001     -0.011753     -0.000127     -0.015006
PSREP          -0.101020     -0.083557     -0.100822     -0.160577      0.121097      0.165692     -0.026165
TEXP           -0.038814     -0.080707      0.230892      0.180278     -0.033478     -0.003734     -0.180875
TCOND          -0.303386     -0.153579     -0.090561     -0.060220      0.313280      0.524832     -0.023403
TLOC            0.055096      0.112401     -0.151065     -0.160758      0.123503      0.022260      0.124502
TSESB           0.059426      0.165745     -0.295766     -0.294416      0.295354      0.226452      0.279797
TTRNG           0.111639      0.268870     -0.212347     -0.334143     -0.023888     -0.067518      0.274516
TCOLAT          0.066848      0.203754     -0.160101     -0.175338      0.366174      0.253062      0.170276
TRELAC          0.037186     -0.078504      0.090987      0.004373     -0.337865     -0.281305     -0.177927
TPRHAB         -0.057657      0.011935     -0.139842     -0.252720      0.363642      0.370688      0.138192
TSEX           -0.008461     -0.134231      0.005035      0.094563     -0.031550     -0.013339     -0.159295
TRACE          -0.106906      0.133843     -0.250627     -0.042031      0.952421      0.853031      0.144251
TSAL            0.111815      0.340660     -0.335107     -0.318262      0.147059      0.032510      0.392529
TVOCAB         -0.039941      0.212992     -0.241980     -0.158581      0.666157      0.546531      0.224989
SSES           -0.163581      0.051109     -0.164037     -0.123431      0.509936      0.574131      0.130297
SFSS           -0.224412     -0.000137     -0.191098     -0.029698      0.554704      0.585971      0.055788
SBEHVR         -0.142222     -0.040834     -0.110661     -0.015577      0.262673      0.333972     -0.039250
SACHV          -0.215403     -0.006201     -0.167168     -0.051915      0.487899      0.562905      0.041078
SSEX           -0.012740     -0.070125      0.026172      0.060104     -0.004119      0.016198      0.014351
SRACE          -0.239176     -0.034625     -0.178602     -0.007618      0.847756      0.920985      0.058449
SKGTN           0.010217      0.293106     -0.344937     -0.240643      0.257809      0.194671      0.361154
SNURSY         -0.013941      0.147943     -0.194738     -0.250506      0.032975      0.031861      0.195884
SHDSTR         -0.006877      0.100754     -0.157025     -0.072101      0.362613      0.346900      0.144886
PSES           -0.078095      0.040971     -0.163213     -0.347524      0.233353      0.276726      0.180885
PPTA           -0.185024     -0.033851     -0.036214     -0.024183      0.017409      0.068251     -0.038987
PTURN           0.010135      0.043509     -0.020603     -0.019678      0.075959      0.068933     -0.051969
PTENR           0.026828      0.165479     -0.128014     -0.125405      0.047448     -0.007025      0.268670
PTEXM           0.052593     -0.026706      0.030814     -0.067613     -0.238549     -0.221502      0.088209
PWHITE         -0.232167     -0.079108     -0.200677     -0.010612      0.772408      0.897850      0.050834
PPROB           1.000000      0.154489      0.102936     -0.129070     -0.080977     -0.263145      0.097038
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                          1ST GRADE - SET 1  59

CORRELATION MATRIX      SELECTED VARIABLE

                  PPROB         PNWENT         PHMWK         PHRTCH         TWHUND         TWHITE         THRTCH

PNWENT         0.154489       1.000000     -0.161721      -0.113675       0.129781      -0.093778       0.300939
PHMWK          0.102936      -0.161721      1.000000       0.121576      -0.259867      -0.177452      -0.242001
PHRTCH        -0.129070      -0.113675      0.121576       1.000000      -0.028486       0.003946      -0.163630
TWHUND        -0.080977       0.129781     -0.259867      -0.028486       1.000000       0.818043       0.142075
TWHITE        -0.263145      -0.093778     -0.177452       0.003946       0.818043       1.000000       0.049898
THRTCH         0.097038       0.300939     -0.242001      -0.163630       0.142075       0.049898       1.000000
TSIZE          0.017648       0.138867     -0.164441      -0.268872       0.221410       0.177403       0.074852
SBIRTH        -0.051250       0.000281     -0.023127      -0.001956       0.296651       0.275955       0.064451
SMTRBN        -0.055552      -0.128234      0.072474       0.062845      -0.001790       0.042146      -0.137172
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CORRELATION MATRIX      SELECTED VARIABLE

                    TSIZE          SBIRTH          SMTRBN

PPLNT            0.095720        0.110177        0.010591
PEXP            -0.021610       -0.102901        0.032118
PTRNG            0.264838        0.019937       -0.104258
PCOLAT           0.043790        0.084042        0.004290
PINSTF          -0.060996        0.099224        0.031127
PSPST            0.228250        0.051645       -0.056573
PTRCK           -0.014873       -0.060772       -0.009131
PTSTG           -0.014047        0.073614        0.008803
PTRNS            0.141927        0.157571       -0.096993
PREMD            0.008151        0.001433       -0.008570
PFLUN           -0.085044        0.032275       -0.071825
PACRD            0.132960        0.043890       -0.023906
PAGTXT          -0.047895       -0.010684        0.021801
PAVTXT           0.050493        0.050309        0.042568
PRURUB           0.185980       -0.165141       -0.113775
PPTRAT           0.015097       -0.187971       -0.034150
PENRL            0.099544       -0.064537       -0.108110
PPRSLR           0.049662        0.011990        0.006276
PAGBLD          -0.082472       -0.168434       -0.021635
PPUPRM           0.055279       -0.082940       -0.061589
PSEX            -0.088754       -0.125475        0.087152
PSREP            0.133277        0.046696        0.048214
TEXP            -0.210842       -0.111325        0.107730
TCOND            0.147349        0.144582        0.143765
TLOC             0.124549        0.399200        0.056454
TSESB            0.267703        0.123429       -0.084483
TTRNG            0.255461        0.003105       -0.016035
TCOLAT           0.134075        0.225532       -0.037108
TRELAC          -0.017160       -0.090324        0.072754
TPRHAB           0.143170        0.184442       -0.000527
TSEX            -0.059641       -0.037202        0.059180
TRACE            0.238940        0.317473       -0.019553
TSAL             0.256061        0.099821       -0.031616
TVOCAB           0.337994        0.255213       -0.024262
SSES             0.194315        0.275070        0.163149
SFSS             0.120420        0.172196        0.089629
SBEHVR           0.079008        0.139336        0.043130
SACHV            0.167147        0.252397        0.115839
SSEX            -0.090072        0.063937       -0.016275
SRACE            0.202711        0.290614        0.076147
SKGTN            0.232133        0.033234       -0.052883
SNURSY           0.178915        0.058063        0.048041
SHDSTR           0.123255        0.156630        0.017163
PSES             0.268829        0.111845       -0.052520
PPTA            -0.022319        0.016960        0.097509
PTURN           -0.023402        0.195400       -0.045547
PTENR            0.127720       -0.024421       -0.000962
PTEXM           -0.127031       -0.197499       -0.080020
PWHITE           0.206290        0.239807        0.027230
PPROB            0.017648       -0.051250       -0.055552
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                         1ST GRADE - SET 1   59

CORRELATION MATRIX       SELECTED VARIABLE

                          TSIZE           SBIRTH           SMTRBN

PNWENT                 0.138867         0.000281        -0.128234
PHMWK                 -0.164441        -0.023127         0.072474
PHRTCH                -0.268872        -0.001956         0.062845
TWHUND                 0.221410         0.296651        -0.001790
TWHITE                 0.177403         0.275955         0.042146
THRTCH                 0.074852         0.064451        -0.137172
TSIZE                  1.000000         0.050918        -0.067953
SBIRTH                 0.050918         1.000000         0.120284
SMTRBN                -0.067953         0.120284         1.000000
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                     1ST GRADE - SET 2   59

SELECTED VARIABLE


THE NUMBER OF OBSERVATIONS IS      30385.

VARIABLE          SUMS        SUMS OF SQUARES          MEAN          SIGMA(N)        SIGMA(N-1)
PLGRD         -7061.2332         23501.6001          -0.2324          0.8482           0.8482
PPTST           761.4967         29749.2314           0.0251          0.9892           0.9892
PASGN          -519.9874         26379.2449          -0.0171          0.9316           0.9316
PDATTN          398.8370         27834.8962           0.0131          0.9570           0.9570
PCRED          -573.2413         25835.1428          -0.0189          0.9219           0.9219
TCRED         -7950.2566          8920.9780          -0.2617          0.4745           0.4745
TASGN         -9909.7743         15131.9026          -0.3261          0.6258           0.6258
TINST         -7451.5964          2867.3565          -0.2452          0.1850           0.1850
THONOR        -5616.5401          5086.5329          -0.1848          0.3650           0.3650
SNOHM         -3523.2716          7804.4613          -0.1160          0.4934           0.4934
SFORPT         -709.4336          7425.0123          -0.0233          0.4938           0.4938
SFORST         -390.0004          7096.4169          -0.0128          0.4831           0.4831
SREPT           318.0918           122.4310           0.0105          0.0626           0.0626
PFNURS         -600.3048         21731.1541          -0.0198          0.8455           0.8455
PCOMPL         1007.4733         25054.5745           0.0332          0.9075           0.9075
PLNDAY        -4369.7338         28048.6987          -0.1438          0.9500           0.9500
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE
1ST GRADE - SET 2 59

CORRELATION MATRIX SELECTED VARIABLE

	SHDSTR	PFNURS	PCOMPL	PLNDAY	PLGRD	PPTST	PASGN
PPLNT	0.042749	-0.048175	-0.057476	0.163721	0.250513	-0.034777	-0.048634
PEXP	-0.144198	0.046157	-0.109971	0.038643	0.002572	0.126867	-0.083997
PTRNG	0.129425	0.062471	0.217799	-0.228215	0.050774	-0.005419	0.196470
PCOLAT	0.068257	0.025705	-0.049786	-0.014536	0.011230	0.045775	0.062999
PINSTF	-0.025570	0.006496	-0.030439	0.202671	0.434690	0.037197	-0.056953
PSPST	0.203994	0.074365	0.312343	-0.219656	0.044100	-0.011853	0.229508
PTRCK	-0.086904	0.041726	-0.002232	0.055114	0.127870	0.011438	-0.027488
PTSTG	-0.038136	0.024526	0.037048	0.093879	0.212708	0.033163	-0.014135
PTRNS	0.058517	0.091793	0.067119	-0.145739	-0.103454	-0.047677	0.085023
PREMD	0.010701	0.044857	-0.002719	-0.041113	0.072672	0.000170	0.059319
PFLUN	-0.175504	0.010696	-0.097098	0.117805	0.005005	0.040275	-0.115357
PACRD	0.047023	-0.012740	0.248277	0.012003	0.015961	-0.007954	0.014634
PAGTXT	-0.075668	0.005525	-0.031509	0.059657	0.042029	0.073485	0.007760
PAVTXT	0.050599	-0.040453	0.044380	-0.037072	-0.067640	-0.116304	0.047304
PRURUB	0.115465	0.136340	0.154037	-0.252456	-0.119831	0.038625	0.173375
PPTRAT	-0.020721	-0.005731	-0.074268	-0.072142	-0.167137	-0.043397	0.016642
PENRL	0.016255	0.067061	-0.026232	-0.045953	0.133236	0.039515	0.106713
PPRSLR	0.026004	0.044857	0.067374	-0.026292	-0.065993	0.073589	0.072450
PAGBLD	-0.012584	0.100315	0.078080	-0.086805	-0.002669	-0.007971	0.023236
PPUPRM	0.017653	-0.005485	0.005073	-0.081265	-0.024813	-0.016754	0.062847
PSEX	-0.023426	0.097888	0.058599	-0.043991	-0.225570	0.071577	-0.012976
PSREP	0.042601	-0.036386	0.072618	-0.015014	-0.022114	-0.068198	0.051469
TEXP	-0.145341	0.013257	-0.115911	0.139836	0.032650	0.031060	-0.133280
TCOND	0.245427	-0.132194	0.151453	-0.018509	-0.008269	-0.058302	0.084285
TLOC	0.075222	0.008781	0.102122	-0.082303	0.036198	-0.055153	0.077494
TSESB	0.223206	-0.013287	0.173980	-0.206963	-0.073906	-0.063080	0.197494
TTRNG	0.140764	0.102474	0.221423	-0.203464	-0.097430	0.039360	0.202824
TCOLAT	0.218409	0.055795	0.155015	-0.113313	0.006072	-0.064540	0.177893
TRELAC	-0.147514	0.022727	-0.105554	0.122433	-0.022355	-0.005071	-0.038951
TPRHAB	0.203198	-0.029950	0.149210	-0.026891	0.001189	-0.056177	0.130890
TSEX	-0.008730	-0.012845	-0.094365	0.010258	-0.085347	0.011211	-0.017471
TRACE	0.375967	-0.074284	0.325785	-0.123441	0.009568	-0.126597	0.197617
TSAL	0.234519	0.112317	0.344432	-0.341930	-0.136769	-0.019467	0.276998
TVOCAB	0.317734	-0.034870	0.381412	-0.142917	-0.031040	-0.070652	0.208994
SSES	0.390244	-0.074504	0.267701	-0.125298	0.018297	-0.069433	0.167942
SFSS	0.271422	-0.061055	0.215457	-0.110729	-0.031947	-0.147233	0.152459
SBEHVR	0.152115	-0.052843	0.110496	-0.027929	-0.016608	-0.056834	0.080782
SACHV	0.354120	-0.103127	0.269107	-0.082080	0.035676	-0.037866	0.141557
SSEX	-0.003631	-0.012542	0.012300	0.081885	0.014778	0.064694	-0.011799
SRACE	0.354296	-0.111677	0.270941	-0.081901	0.056877	-0.140833	0.167496
SKGTN	0.339666	0.044979	0.361307	-0.365403	-0.101821	-0.031202	0.252400
SNURSY	0.105793	0.009930	0.154687	-0.209888	-0.079672	-0.069665	0.161771
SHDSTR	1.000000	0.013579	0.180729	-0.149854	-0.014218	-0.052403	0.113463
PFNURS	0.013579	1.000000	0.037698	-0.055599	-0.081134	0.137489	-0.007966
PCOMPL	0.180729	0.037698	1.000000	-0.216020	-0.063788	-0.022459	0.188489
PLNDAY	-0.149854	-0.055599	-0.216020	1.000000	0.110884	0.100072	-0.239465
PLGRD	-0.014218	-0.081134	-0.063788	0.110884	1.000000	-0.035251	-0.084330
PPTST	-0.052403	0.137489	-0.022459	0.100072	-0.035251	1.000000	0.012822
PASGN	0.113463	-0.007966	0.188489	-0.239465	-0.084330	0.012822	1.000000
PDATTN	0.143510	-0.056422	0.214122	0.001413	-0.020339	-0.069828	0.095045

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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                          1ST GRADE - SET 2   59

CORRELATION MATRIX      SELECTED VARIABLE

                    SHDSTR       PFNURS       PCOMPL       PLNDAY        PLGRD        PPTST        PASGN

PCRED            -0.024644     0.061323     0.057426    -0.132429    -0.026577     0.015019     0.003070
TCRED             0.038904     0.069755     0.098638    -0.220708    -0.065826    -0.033906     0.090026
TASGN            -0.006387    -0.023153    -0.071438     0.210883     0.192059     0.003429    -0.152120
TINST            -0.072118     0.007629     0.019324    -0.030754     0.028427     0.018945     0.032193
THONOR           -0.015512     0.021937     0.086238     0.054722     0.042729     0.012886     0.020989
SNOHM             0.318324    -0.041626     0.190833    -0.142987     0.039855    -0.099860     0.127096
SFORPT            0.031605    -0.035198    -0.020337     0.028358    -0.001478    -0.021315     0.028999
SFORST            0.017433    -0.033318    -0.010283     0.014137     0.033220    -0.007393     0.018911
SREPT             0.133940    -0.012210     0.093180     0.000485     0.040469     0.004355     0.044112
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                        1ST GRADE - SET 2   59

CORRELATION MATRIX       SELECTED VARIABLE

                    PDATTN        PCRED         TCRED         TASGN         TINST        THONOR         SNOHM

PPLNT             0.090479      0.082131      0.061170      0.168597      0.002661      0.094679      0.186798
PEXP             -0.057376      0.075335      0.049998      0.012620      0.013235     -0.005756     -0.067422
PTRNG            -0.017854      0.094175      0.147273     -0.235607      0.004563      0.069475      0.188802
PCOLAT            0.034018      0.115458      0.102562      0.029354     -0.013554      0.030695      0.090418
PINSTF           -0.046047      0.094985      0.013748      0.235569      0.127456      0.079796     -0.062913
PSPST             0.037578      0.143083      0.171738     -0.166041      0.014891      0.037512      0.182371
PTRCK            -0.016573     -0.001276      0.032381      0.011516      0.025301      0.019488     -0.065447
PTSTG             0.005980      0.035028      0.043748      0.140246      0.046333     -0.024404     -0.061226
PTRNS            -0.039827      0.158418      0.158643     -0.120530     -0.024805      0.079463      0.072405
PREMD            -0.035567      0.024879      0.074264      0.010298      0.036649      0.029254      0.011294
PFLUN            -0.113249     -0.030407     -0.075813      0.200714     -0.027124      0.006702     -0.237132
PACRD             0.058730      0.026306      0.026053     -0.020144     -0.015399      0.085447      0.132181
PAGTXT           -0.089939     -0.008001      0.033465     -0.053732      0.064312     -0.011367     -0.008292
PAVTXT            0.079551     -0.057105     -0.055053      0.073869      0.002266      0.047060      0.092984
PRURUB           -0.053010      0.078761      0.132433     -0.404378      0.016245      0.042447      0.213424
PPTRAT           -0.118862      0.073362      0.044112     -0.314526     -0.097721     -0.011532     -0.014426
PENRL            -0.141678      0.182620      0.082142     -0.079701      0.058419      0.065604      0.083097
PPRSLR            0.094636      0.009541      0.040299      0.070569     -0.009698      0.066987      0.005933
PAGBLD           -0.048468      0.004082     -0.028636     -0.014939      0.029819     -0.032505     -0.021037
PPUPRM           -0.034650      0.085856      0.065648     -0.102284     -0.024850      0.010340     -0.021394
PSEX             -0.023583     -0.071958      0.009744     -0.069751      0.029436     -0.056750     -0.059422
PSREP             0.175751      0.067291      0.047513     -0.060937     -0.019946      0.105237      0.195886
TEXP              0.010289     -0.037773      0.008412      0.161481     -0.019721      0.002349     -0.049422
TCOND             0.321046     -0.002506      0.002719      0.059456     -0.059409      0.147802      0.433377
TLOC              0.092343      0.117528      0.247174      0.023530     -0.024707      0.140583      0.053189
TSESB             0.118963      0.190001      0.253780     -0.182603     -0.048140      0.104081      0.320850
TTRNG             0.036593      0.202261      0.325421     -0.196538      0.085991      0.192306      0.123492
TCOLAT            0.136335      0.097971      0.206961      0.080061      0.060859      0.153047      0.203821
TRELAC           -0.005189      0.015754      0.156107     -0.064652      0.186376      0.106544     -0.134960
TPRHAB            0.149864      0.025498      0.095233      0.050592      0.024145      0.136153      0.305371
TSEX             -0.000330     -0.050396     -0.134240     -0.034418     -0.238388     -0.169706      0.035261
TRACE             0.277445      0.006685     -0.003240      0.180282     -0.117979      0.084340      0.496312
TSAL              0.061660      0.225294      0.385761     -0.188387      0.037720      0.109346      0.155904
TVOCAB            0.210389      0.106253      0.113535      0.047691     -0.081373      0.147086      0.361592
SSES              0.278748      0.043191      0.059068      0.052641     -0.065407      0.126911      0.616736
SFSS              0.202425     -0.046457     -0.000871      0.082405     -0.043308      0.010230      0.464518
SBEHVR            0.114731     -0.023532     -0.012897      0.057171      0.006816      0.060310      0.262963
SACHV             0.278421     -0.025632      0.012021      0.056082     -0.062993      0.078477      0.420411
SSEX             -0.021938     -0.025888     -0.088742      0.033569     -0.038387      0.003011     -0.118739
SRACE             0.280726     -0.053256     -0.056326      0.141902     -0.080433      0.075278      0.597134
SKGTN             0.075904      0.093723      0.156124     -0.223513     -0.049174     -0.025905      0.271750
SNURSY            0.082480      0.107774      0.194632     -0.211167     -0.010104      0.095801      0.319433
SHOSTR            0.143510     -0.024644      0.038904     -0.006387     -0.072118     -0.015512      0.318324
PFNURS           -0.056422      0.061323      0.069755     -0.023153      0.007629      0.021937     -0.041626
PCOMPL            0.214122      0.057426      0.098638     -0.071438      0.019324      0.086238      0.190833
PLNDAY            0.001413     -0.132429     -0.220708      0.210883     -0.030754      0.054722     -0.142987
PLGRD            -0.020339     -0.026577     -0.065826      0.192059      0.028427      0.042729      0.039855
PPTST            -0.069828      0.015019     -0.033906      0.003429      0.018945      0.012886     -0.099860
PASGN             0.095045      0.003070      0.090026     -0.152120      0.032193      0.020989      0.127096
PDATTN            1.000000      0.003219      0.000659      0.052127     -0.043707      0.100621      0.222243
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                            1ST GRADE - SET 2   59

CORRELATION MATRIX      SELECTED VARIABLE

                    PDATTN       PCRED        TCRED        TASGN        TINST        THONOR       SNOHM

PCRED              0.003219     1.000000     0.306552     0.040012     0.037726     0.007218     0.027116
TCRED              0.000659     0.306552     1.000000     0.014273     0.221223     0.031709     0.074350
TASGN              0.052127     0.040012     0.014273     1.000000     0.039138     0.028700    -0.009876
TINST             -0.043707     0.037726     0.221223     0.039138     1.000000     0.105853    -0.040979
THONOR             0.100621     0.007218     0.031709     0.028700     0.105853     1.000000     0.121874
SNOHM              0.222243     0.027116     0.074350    -0.009876    -0.040979     0.121874     1.000000
SFORPT             0.074497    -0.070681    -0.137366    -0.062496    -0.050934    -0.022698     0.219862
SFORST             0.053167    -0.029923    -0.090912    -0.053146    -0.041767    -0.042006     0.195515
SREPT              0.071493     0.026334     0.043087     0.025179     0.059122     0.027473     0.130295
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE

CORRELATION MATRIX       SELECTED VARIABLE

                       SFORPT          SFORST          SREPT

PPLNT                0.036545        0.001686        0.037417
PEXP                -0.029358       -0.025796       -0.084509
PTRNG               -0.078443       -0.091030        0.046793
PCOLAT              -0.052370       -0.047431        0.030830
PINSTF              -0.079986       -0.051508        0.079948
PSPST               -0.038221       -0.071576        0.087582
PTRCK               -0.059869       -0.078204       -0.055740
PTSTG               -0.035874       -0.005163       -0.006550
PTRNS               -0.105850       -0.095047        0.039390
PREMD               -0.038212       -0.026296        0.040928
PFLUN               -0.157169       -0.160145       -0.038696
PACRD               -0.061089       -0.066144        0.009083
PAGTXT              -0.088117       -0.061921       -0.020056
PAVTXT               0.046382        0.052450       -0.035752
PRURUB              -0.016884       -0.035041        0.013299
PPTRAT               0.043583        0.018434       -0.006170
PENRL               -0.025631       -0.046859        0.082105
PPRSLR              -0.011271       -0.004591        0.070985
PAGBLD              -0.026676       -0.001665        0.005691
PPUPRM              -0.079971       -0.094258       -0.017582
PSEX                 0.028453        0.044953       -0.032661
PSREP                0.050989        0.009823        0.024534
TEXP                 0.007349        0.004711       -0.050612
TCOND                0.146400        0.123754        0.197271
TLOC                -0.050835       -0.062867       -0.010787
TSESB               -0.040466       -0.028834        0.039446
TTRNG               -0.110028       -0.111773        0.008647
TCOLAT              -0.131387       -0.137139        0.185745
TRELAC               0.052431        0.067194       -0.047881
TPRHAB               0.029435        0.025907        0.112743
TSEX                 0.083597        0.081698       -0.058465
TRACE               -0.051004       -0.051184        0.189765
TSAL                -0.134354       -0.132142        0.033274
TVOCAB              -0.062172       -0.065848        0.122563
SSES                 0.177514        0.172751        0.269467
SFSS                 0.107864        0.067696       -0.030495
SBEHVR               0.058396        0.042368        0.206617
SACHV                0.070031        0.082607        0.150673
SSEX                -0.143352       -0.089435        0.283690
SRACE                0.101218        0.104880        0.236243
SKGTN               -0.026362        0.000039        0.107861
SNURSY               0.021896        0.009370       -0.103051
SHDSTR               0.031605        0.017430        0.133940
PFNURS              -0.035198       -0.033318       -0.012210
PCOMPL              -0.020337       -0.010283        0.093180
PLNDAY               0.028358        0.014137        0.000485
PLGRD               -0.001478        0.033220        0.040469
PPTST               -0.021315       -0.007393        0.004355
PASGN                0.028999        0.018911        0.044112
PDATTN               0.074497        0.053167        0.071493
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FACTOR ANALYSIS - MERGED DATA
FIRST GRADE                                                  1ST GRADE - SET 2   59

CORRELATION MATRIX      SELECTED VARIABLE

                      SFORPT        SFORST        SREPT

PCRED              -0.070681     -0.029923      0.026334
TCRED              -0.137366     -0.090912      0.043087
TASGN              -0.062496     -0.053146      0.025179
TINST              -0.050934     -0.041767      0.059122
THONOR             -0.022698     -0.042006      0.027473
SNOHM               0.219862      0.195515      0.130295
SFORPT              1.000000      0.821681     -0.035504
SFORST              0.821681      1.000000     -0.015332
SREPT              -0.035504     -0.015332      1.000000
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Appendix XI (continued)

Partial Correlations of School Variables With School Outcomes

TABLE XI.1.1.- PARTIAL CORRELATIONS OF THE STUDENT BODY'S EXPECTATIONS FOR EXCELLENCE AT THE TWELFTH GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
NUMBER OF STUDENTS ENROLLED IN SCHOOL	-.03	.00	.00	.00
DAILY ATTENDANCE	-.06	-.07	-.05	.08
TEACHING CONDITIONS	-.04	-.05	.03	.03
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	-.37	-.38	-.40	-.08
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	-.35	-.35	-.37	-.01
PCT WHITE STUDENTS IN TEACHER'S CLASS	-.32	-.33	-.35	.10
TEACHER'S VOCABULARY SCORE	-.32	-.32	-.30	-.10
STUDENT BODY'S SOCIO-ECONOMIC STATUS	-.15	-.15	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE	.09	.09	.19	.30
STUDENT BODY'S FAMILY STRUCTURE+STABILITY	-.03	-.04	.00	.00
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES	.45	.46	.61	.50
STUDENT BODY'S STUDY HABITS	.39	.39	.52	.42
STUDENT BODY'S ACHIEVEMENT LEVEL	-.23	-.23	-.23	.02
PROPORTION OF FEMALES IN STUDENT BODY	.08	.07	.11	.04
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	-.38	-.38	-.42	.00
STUDENT BODY'S KINDERGARTEN ATTENDANCE	-.21	-.21	-.16	-.19
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.19	.19	.29	.20
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.28	.28	.32	.28
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.00	.03	.20

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TABLE XI.1.2.-PARTIAL CORRELATIONS OF THE STUDENT BODY'S EXPECTATIONS FOR EXCELLENCE AT THE NINTH GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
NUMBER OF STUDENTS ENROLLED IN SCHOOL	-.10	.00	.00	.00
DAILY ATTENDANCE	.26	.25	-.06	.02
TEACHING CONDITIONS	.30	.29	.02	.10
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.12	.12	-.44	-.19
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.12	.12	-.41	-.16
PCT WHITE STUDENTS IN TEACHER'S CLASS	.29	.29	-.28	.12
TEACHER'S VOCABULARY SCORE	.09	.09	-.24	-.12
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.47	.50	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE	.72	.72	.44	.51
STUDENT BODY'S FAMILY STRUCTURE+STABILITY	.66	.66	.00	.00
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES	.69	.70	.57	.46
STUDENT BODY'S STUDY HABITS	.82	.82	.64	.56
STUDENT BODY'S ACHIEVEMENT LEVEL	.31	.31	-.38	-.17
PROPORTION OF FEMALES IN STUDENT BODY	.53	.53	.21	.10
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.29	.28	-.41	.00
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.32	.37	.02	-.12
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.67	.67	.37	.26
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.66	.66	.41	.33
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.00	.44	.52

TABLE XI.1.3.- PARTIAL CORRELATIONS OF THE STUDENT BODY'S EXPECTATIONS FOR EXCELLENCE AT THE SIXTH GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
NUMBER OF STUDENTS ENROLLED IN SCHOOL.....	-.09	.00	.00	.00
DAILY ATTENDANCE..........................	.25	-.11	.01	.01
TEACHER'S EXPERIENCE......................	-.01	-.03	.04	.04
TEACHING CONDITIONS.......................	.28	.28	-.08	-.07
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP..	.40	.39	-.06	-.03
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.39	.38	-.05	-.01
PCT WHITE STUDENTS IN TEACHER'S CLASS.....	.42	.41	-.06	-.02
TEACHER'S VOCABULARY SCORE................	.29	.30	-.06	-.04
STUDENT BODY'S SOCIO-ECONOMIC STATUS......	.48	.50	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE.......	.77	.77	.54	.53
STUDENT BODY'S FAMILY STRUCTURE+STABILITY.	.67	.67	.00	.00
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES..	.72	.73	.54	.54
STUDENT BODY'S STUDY HABITS...............	.76	.76	.53	.53
STUDENT BODY'S ACHIEVEMENT LEVEL..........	.50	.50	-.01	.03
PROPORTION OF FEMALES IN STUDENT BODY.....	.32	.32	.11	.11
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION..	.46	.45	-.06	.00
STUDENT BODY'S KINDERGARTEN ATTENDANCE....	.45	.38	.05	.06
NURSERY SCHOOL ATTENDANCE.................	.73	.48	.12	.12
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME..	.49	.12	-.02	-.02
PARENT SPKS. A FOREIGN LANGUAGE AT HOME...	.53	.00	-.09	-.09
SQUARED MULTIPLE CORRELATION OF THE ...... VARIABLES PARTIALED OUT WITH THE .... DEPENDENT VARIABLE......................	.00	.01	.46	.46

TABLE XI.1.4.- PARTIAL CORRELATIONS OF THE STUDENT BODY'S EXPECTATIONS FOR EXCELLENCE AT THE THIRD GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE HB + RACE
NUMBER OF STUDENTS ENROLLED IN SCHOOL	.02	.00	.00	.00
DAILY ATTENDANCE	.09	.10	-.01	.01
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.18	.18	-.10	-.02
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.19	.19	-.08	.00
PCT WHITE STUDENTS IN TEACHER'S CLASS	.20	.20	-.09	.00
TEACHER'S VOCABULARY SCORE	.16	.16	-.04	.00
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.28	.28	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE	.51	.51	.38	.38
STUDENT BODY'S FAMILY STRUCTURE+STABILITY	.47	.48	.00	.00
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES	.51	.51	.39	.40
STUDENT BODY'S STUDY HABITS	.52	.52	.33	.34
STUDENT BODY'S ACHIEVEMENT LEVEL	.25	.26	.01	.04
PROPORTION OF FEMALES IN STUDENT BODY	.41	.41	.26	.25
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.23	.23	-.10	.00
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.22	.22	.09	.09
NURSERY SCHOOL ATTENDANCE	.39	.39	.31	.30
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.40	.40	.21	.21
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.37	.37	.18	.18
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.00	.23	.24

TABLE XI.2.1.-PARTIAL CORRELATIONS OF THE STUDENT BODY'S ATTITUDE TOWARD LIFE AT THE TWELFTH GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
COMPULSORY ATTENDANCE LAW	.13	.13	.07	.03
PUPIL/TEACHER RATIO	-.24	-.19	-.14	-.15
NUMBER OF STUDENTS ENROLLED IN SCHOOL	-.17	.00	.00	.00
DAILY ATTENDANCE	.34	.33	.27	.23
PUPILS/ROOM RATIO	-.23	-.18	-.21	-.19
TEACHING CONDITIONS	.36	.36	.05	.05
PREFERENCE FOR HIGH ABILITY STUDENTS	.26	.29	.12	.10
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.52	.52	.18	.03
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS	.54	.54	.20	.08
PCT WHITE STUDENTS IN TEACHER'S CLASS	.55	.54	.17	.01
TEACHER'S VOCABULARY SCORE	.38	.39	.11	.02
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE	.09	.09	.19	.30
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.44	.50	.00	.00
STUDENT BODY'S FAMILY STRUCTURE+STABILITY	.67	.66	.00	.00
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES	.32	.35	.16	.31
STUDENT BODY'S STUDY HABITS	.58	.58	.34	.45
STUDENT BODY'S ACHIEVEMENT LEVEL	.62	.62	.33	.27
PROPORTION OF FEMALES IN STUDENT BODY	.33	.31	-.06	-.03
STUDENT BODY'S PARENTAL PTA ATTENDANCE	.33	.31	.07	.10
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.09	.15	-.07	-.06
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.35	.36	.07	.13
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.26	.23	.08	.11
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.54	.54	.19	.00
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.02	.47	.49

TABLE XI.2.2.- PARTIAL CORRELATIONS OF THE STUDENT BODY'S ATTITUDE TOWARD LIFE AT THE NINTH GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
COMPULSORY ATTENDANCE LAW	.25	.26	.06	.06
PUPIL/TEACHER RATIO	-.26	-.24	-.06	-.06
NUMBER OF STUDENTS ENROLLED IN SCHOOL	-.13	.00	.00	.00
DAILY ATTENDANCE	.38	.37	.03	.03
PUPILS/ROOM RATIO	-.26	-.23	-.11	-.11
TEACHING CONDITIONS	.35	.35	.00	.01
PREFERENCE FOR HIGH ABILITY STUDENTS	.22	.24	.05	.04
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.47	.47	.02	-.04
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.40	.46	.02	-.04
PCT WHITE STUDENTS IN TEACHER'S CLASS	.45	.51	-.05	.00
TEACHER'S VOCABULARY SCORE	.34	.34	.04	.03
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE	.72	.72	.44	.51
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.60	.64	.00	.00
STUDENT BODY'S FAMILY STRUCTURE+STABILITY	.75	.75	.00	.00
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES	.63	.65	.33	.41
STUDENT BODY'S STUDY HABITS	.79	.79	.47	.55
STUDENT BODY'S ACHIEVEMENT LEVEL	.64	.65	.18	.20
PROPORTION OF FEMALES IN STUDENT BODY	.47	.48	.04	.06
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.60	.60	.05	.00
STUDENT BODY'S PARENTAL PTA ATTENDANCE	.52	.52	.13	.17
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.42	.48	.07	.09
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.60	.60	.09	.12
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.53	.52	.08	.10
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.01	.60	.60

TABLE XI.2.3.-PARTIAL CORRELATIONS OF THE STUDENT BODY'S ATTITUDE TOWARD LIFE AT THE SIXTH GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
COMPULSORY ATTENDANCE LAW	.22	.08	-.05	-.05
PUPIL/TEACHER RATIO	-.09	-.07	.00	.00
NUMBER OF STUDENTS ENROLLED IN SCHOOL	-.07	.00	.00	.00
DAILY ATTENDANCE	.24	-.16	-.04	-.05
PUPILS/ROOM RATIO	-.04	-.03	.00	.00
TEACHING CONDITIONS	.33	.33	-.10	-.09
PREFERENCE FOR HIGH ABILITY STUDENTS	.24	.25	-.01	.00
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.48	.47	-.01	.06
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.46	.45	-.02	.04
PCT WHITE STUDENTS IN TEACHER'S CLASS	.48	.47	-.06	.01
TEACHER'S VOCABULARY SCORE	.40	.41	.05	.07
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE.	.77	.77	.54	.53
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.58	.59	.00	.00
STUDENT BODY'S FAMILY STRUCTURE+STABILITY.	.73	.73	.00	.00
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES	.73	.73	.48	.48
STUDENT BODY'S STUDY HABITS	.86	.86	.68	.68
STUDENT BODY'S ACHIEVEMENT LEVEL	.60	.60	.06	.11
PROPORTION OF FEMALES IN STUDENT BODY	.37	.37	.18	.17
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.51	.51	-.07	.00
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.56	.44	.08	.09
NURSERY SCHOOL ATTENDANCE	.80	.54	.14	.14
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.49	.16	.00	.00
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.58	.06	-.04	-.04
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.00	.57	.57

TABLE XI.2.4.-PARTIAL CORRELATIONS OF THE STUDENT BODY'S ATTITUDE TOWARD LIFE AT THE THIRD GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
COMPULSORY ATTENDANCE LAW	.06	.05	-.04	-.03
PUPIL/TEACHER RATIO	-.07	-.04	.00	.00
NUMBER OF STUDENTS ENROLLED IN SCHOOL	-.10	.00	.00	.00
DAILY ATTENDANCE	.09	.07	-.01	.00
PUPILS/ROOM RATIO	-.08	-.04	-.01	-.01
TEACHING CONDITIONS	.15	.15	.00	.01
PREFERENCE FOR HIGH ABILITY STUDENTS	.04	.06	-.05	-.04
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.11	.11	-.15	-.15
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.11	.10	-.15	-.14
PCT WHITE STUDENTS IN TEACHER'S CLASS	.17	.16	-.10	-.08
TEACHER'S VOCABULARY SCORE	.08	.09	-.08	-.06
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE.	.51	.51	.38	.38
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.20	.21	.00	.00
STUDENT BODY'S FAMILY STRUCTURE+STABILITY.	.46	.46	.00	.00
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES	.41	.41	.29	.30
STUDENT BODY'S STUDY HABITS	.41	.42	.23	.24
STUDENT BODY'S ACHIEVEMENT LEVEL	.22	.22	.03	.05
PROPORTION OF FEMALES IN STUDENT BODY	.40	.40	.26	.25
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.22	.21	-.07	.00
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.06	.09	-.03	-.04
NURSERY SCHOOL ATTENDANCE	.25	.26	.16	.15
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.45	.44	.28	.28
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.42	.42	.26	.26
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.01	.22	.22

TABLE XI.3.1.-PARTIAL CORRELATIONS OF THE STUDENT BODY'S EDUCATIONAL PLANS AND DESIRES AT THE TWELFTH GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
SPECIALIZED STAFF AND SERVICES	.15	.07	-.14	-.22
NUMBER OF STUDENTS ENROLLED IN SCHOOL	.13	.00	.00	.00
DAILY ATTENDANCE	.04	.05	-.06	.12
PRINCIPAL'S ESTIMATE OF SCHOOL REPUTATION	.17	.14	.02	.03
TEACHING CONDITIONS	.39	.40	.21	.25
TEACHER'S SOCIO-ECONOMIC BACKGROUND	-.03	-.07	-.24	-.09
PREFERENCE FOR HIGH ABILITY STUDENTS	.32	.32	.13	.21
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	-.04	-.03	-.49	-.02
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS	-.03	-.02	-.48	.00
PCT WHITE STUDENTS IN TEACHER'S CLASS	-.03	-.01	-.50	.01
TEACHER'S VOCABULARY SCORE	.03	.02	-.37	-.12
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE	.45	.46	.61	.50
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.49	.48	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE	.32	.35	.16	.31
STUDENT BODY'S FAMILY STRUCTURE+STABILITY	.28	.31	.00	.00
STUDENT BODY'S STUDY HABITS	.43	.44	.35	.19
STUDENT BODY'S ACHIEVEMENT LEVEL	.34	.34	-.14	.28
PROPORTION OF FEMALES IN STUDENT BODY	.15	.18	.02	-.09
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.13	.10	-.16	-.21
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.31	.31	.12	-.03
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.14	.19	.09	.01
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	-.05	-.04	-.55	.00
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.01	.24	.47

TABLE XI.3.2.- PARTIAL CORRELATIONS OF THE STUDENT BODY'S EDUCATIONAL PLANS AND DESIRES AT THE NINTH GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
SPECIALIZED STAFF AND SERVICES	.25	.25	-.05	-.13
NUMBER OF STUDENTS ENROLLED IN SCHOOL	.10	.00	.00	.00
DAILY ATTENDANCE	.28	.31	-.01	.09
PRINCIPAL'S ESTIMATE OF SCHOOL REPUTATION	.25	.23	.02	.04
TEACHING CONDITIONS	.40	.41	.11	.22
TEACHER'S SOCIO-ECONOMIC BACKGROUND	.20	.19	-.08	-.06
PREFERENCE FOR HIGH ABILITY STUDENTS	.22	.21	-.02	.07
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.21	.21	-.37	.06
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS	.19	.19	-.38	.02
PCT WHITE STUDENTS IN TEACHER'S CLASS	.24	.25	-.44	-.08
TEACHER'S VOCABULARY SCORE	.23	.23	-.16	.01
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE	.69	.70	.57	.46
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.69	.68	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE	.63	.65	.33	.41
STUDENT BODY'S FAMILY STRUCTURE+STABILITY	.56	.57	.00	.00
STUDENT BODY'S STUDY HABITS	.68	.70	.54	.41
STUDENT BODY'S ACHIEVEMENT LEVEL	.50	.50	-.19	.18
PROPORTION OF FEMALES IN STUDENT BODY	.41	.41	.13	-.03
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.29	.29	-.49	.00
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.53	.52	.16	.02
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.56	.56	.22	.06
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.41	.44	.15	.00
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.01	.49	.61

TABLE XI.3.3.-PARTIAL CORRELATIONS OF THE STUDENT BODY'S EDUCATIONAL PLANS AND DESIRES AT THE SIXTH GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
SPECIALIZED STAFF AND SERVICES	.20	.21	.06	.05
NUMBER OF STUDENTS ENROLLED IN SCHOOL	.04	.00	.00	.00
DAILY ATTENDANCE	.25	-.15	-.02	-.04
PRINCIPAL'S ESTIMATE OF SCHOOL REPUTATION	.23	.23	.03	.03
TEACHING CONDITIONS	.41	.42	.02	.05
TEACHER'S SOCIO-ECONOMIC BACKGROUND	.26	.26	.05	.05
PREFERENCE FOR HIGH ABILITY STUDENTS	.27	.27	.00	.02
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.40	.41	-.09	.02
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS	.38	.38	-.10	.00
PCT WHITE STUDENTS IN TEACHER'S CLASS	.39	.40	-.16	-.07
TEACHER'S VOCABULARY SCORE	.40	.40	.02	.06
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE	.72	.73	.54	.54
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.64	.64	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE	.73	.73	.48	.48
STUDENT BODY'S FAMILY STRUCTURE+STABILITY	.61	.62	.00	.00
STUDENT BODY'S STUDY HABITS	.77	.77	.54	.53
STUDENT BODY'S ACHIEVEMENT LEVEL	.64	.64	.15	.25
PROPORTION OF FEMALES IN STUDENT BODY	.30	.30	.15	.12
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.45	.46	-.14	.00
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.57	.40	.03	.04
NURSERY SCHOOL ATTENDANCE	.65	.52	.12	.12
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.40	.23	.07	.08
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.42	.11	.01	.01
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.00	.49	.50

TABLE XI.3.4.- PARTIAL CORRELATIONS OF THE STUDENT BODY'S EDUCATIONAL PLANS AND DESIRES AT THE THIRD GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
SPECIALIZED STAFF AND SERVICES............	.10	.11	.01	.01
NUMBER OF STUDENTS ENROLLED IN SCHOOL.....	.01	.00	.00	.00
DAILY ATTENDANCE..........................	.15	.16	.04	.04
PRINCIPAL'S ESTIMATE OF SCHOOL REPUTATION.	.14	.15	.06	.06
TEACHING CONDITIONS.......................	.28	.28	.07	.07
TEACHER'S SOCIO-ECONOMIC BACKGROUND.......	.08	.08	-.03	-.03
PREFERENCE FOR HIGH ABILITY STUDENTS......	.17	.17	.03	.03
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP..	.28	.28	.03	.03
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.26	.26	.03	.02
PCT WHITE STUDENTS IN TEACHER'S CLASS.....	.31	.32	.06	.08
TEACHER'S VOCABULARY SCORE................	.22	.22	.02	.01
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE.	.51	.51	.39	.40
STUDENT BODY'S SOCIO-ECONOMIC STATUS......	.35	.35	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE.......	.41	.41	.29	.30
STUDENT BODY'S FAMILY STRUCTURE+STABILITY.	.39	.40	.00	.00
STUDENT BODY'S STUDY HABITS...............	.48	.48	.28	.28
STUDENT BODY'S ACHIEVEMENT LEVEL..........	.36	.36	.14	.14
PROPORTION OF FEMALES IN STUDENT BODY.....	.25	.25	.11	.12
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION..	.31	.31	.01	.00
STUDENT BODY'S KINDERGARTEN ATTENDANCE....	.23	.24	.09	.09
NURSERY SCHOOL ATTENDANCE.................	.25	.25	.15	.15
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME..	.31	.31	.13	.13
PARENT SPKS. A FOREIGN LANGUAGE AT HOME...	.30	.30	.12	.12
SQUARED MULTIPLE CORRELATION OF THE ...... VARIABLES PARTIALED OUT WITH THE .... DEPENDENT VARIABLE.......................	.00	.00	.19	.19

TABLE XI.4.1.-PARTIAL CORRELATIONS OF THE STUDENT BODY'S STUDY HABITS AT THE TWELFTH GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
COMPULSORY ATTENDANCE LAW..................	-.03	-.03	-.11	-.02
NUMBER OF STUDENTS ENROLLED IN SCHOOL.....	-.02	.00	.00	.00
DAILY ATTENDANCE...........................	.21	.21	.12	.25
TEACHING CONDITIONS........................	.20	.20	-.07	-.08
PREFERENCE FOR HIGH ABILITY STUDENTS......	.16	.17	.03	.07
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP..	.14	.14	-.31	.06
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.15	.15	-.30	.06
PCT WHITE STUDENTS IN TEACHER'S CLASS.....	.13	.13	-.37	-.05
TEACHER'S VOCABULARY SCORE................	.14	.14	-.15	.05
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE.	.39	.39	.52	.42
STUDENT BODY'S SOCIO-ECONOMIC STATUS......	.34	.35	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE.......	.58	.58	.34	.45
STUDENT BODY'S FAMILY STRUCTURE+STABILITY.	.56	.56	.00	.00
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES..	.43	.44	.35	.19
STUDENT BODY'S ACHIEVEMENT LEVEL..........	.22	.22	-.36	-.18
PROPORTION OF FEMALES IN STUDENT BODY.....	.53	.53	.33	.29
STUDENT BODY'S PARENTAL PTA ATTENDANCE....	.33	.33	.13	.09
STUDENT BODY'S KINDERGARTEN ATTENDANCE....	.10	.12	-.02	-.04
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME..	.52	.52	.38	.31
PARENT SPKS. A FOREIGN LANGUAGE AT HOME...	.44	.45	.38	.35
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION..	.11	.11	-.38	.00
SQUARED MULTIPLE CORRELATION OF THE ...... VARIABLES PARTIALED OUT WITH THE .... DEPENDENT VARIABLE......................	.00	.00	.32	.42

TABLE XI.4.2.- PARTIAL CORRELATIONS OF THE STUDENT BODY'S STUDY HABITS AT THE NINTH GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
COMPULSORY ATTENDANCE LAW	.15	.15	-.12	-.08
NUMBER OF STUDENTS ENROLLED IN SCHOOL	-.06	.00	.00	.00
DAILY ATTENDANCE	.30	.29	-.11	-.03
TEACHING CONDITIONS	.30	.30	-.06	.01
PREFERENCE FOR HIGH ABILITY STUDENTS	.16	.16	-.05	.03
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.29	.29	-.36	-.02
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.29	.29	-.35	.00
PCT WHITE STUDENTS IN TEACHER'S CLASS	.37	.36	-.41	-.10
TEACHER'S VOCABULARY SCORE	.24	.24	-.12	.03
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE.	.82	.82	.64	.56
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.57	.59	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE	.79	.79	.47	.55
STUDENT BODY'S FAMILY STRUCTURE+STABILITY.	.82	.82	.00	.00
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES	.68	.70	.54	.41
STUDENT BODY'S ACHIEVEMENT LEVEL	.46	.46	-.31	-.05
PROPORTION OF FEMALES IN STUDENT BODY	.65	.65	.30	.19
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.43	.42	-.43	.00
STUDENT BODY'S PARENTAL PTA ATTENDANCE	.74	.73	.51	.40
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.52	.56	.30	.19
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.76	.76	.40	.30
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.67	.68	.35	.24
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.00	.68	.74

TABLE XI.4.3.- PARTIAL CORRELATIONS OF THE STUDENT BODY'S STUDY HABITS AT THE SIXTH GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
COMPULSORY ATTENDANCE LAW..................	.21	.10	-.03	-.04
NUMBER OF STUDENTS ENROLLED IN SCHOOL.....	-.03	.00	.00	.00
DAILY ATTENDANCE..........................	.21	-.16	-.04	-.06
TEACHING CONDITIONS.......................	.34	.34	-.11	-.07
PREFERENCE FOR HIGH ABILITY STUDENTS......	.26	.27	.01	.04
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP..	.42	.42	-.13	.01
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.39	.39	-.14	-.02
PCT WHITE STUDENTS IN TEACHER'S CLASS.....	.43	.43	-.17	-.02
TEACHER'S VOCABULARY SCORE................	.39	.39	.01	.06
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE.	.76	.76	.53	.53
STUDENT BODY'S SOCIO-ECONOMIC STATUS......	.60	.60	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE.......	.86	.86	.68	.68
STUDENT BODY'S FAMILY STRUCTURE+STABILITY.	.72	.72	.00	.00
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES..	.77	.77	.54	.53
STUDENT BODY'S ACHIEVEMENT LEVEL..........	.59	.59	.00	.11
PROPORTION OF FEMALES IN STUDENT BODY.....	.39	.39	.23	.20
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION..	.47	.47	-.18	.00
STUDENT BODY'S KINDERGARTEN ATTENDANCE....	.59	.39	-.01	.01
NURSERY SCHOOL ATTENDANCE.................	.77	.53	.11	.12
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME..	.48	.20	.06	.06
PARENT SPKS. A FOREIGN LANGUAGE AT HOME...	.56	.04	-.07	-.07
SQUARED MULTIPLE CORRELATION OF THE ...... VARIABLES PARTIALED OUT WITH THE .... DEPENDENT VARIABLE......................	.00	.00	.56	.57

TABLE XI.4.4.- PARTIAL CORRELATIONS OF THE STUDENT BODY'S STUDY HABITS AT THE THIRD GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
COMPULSORY ATTENDANCE LAW..................	.27	.27	.10	.10
NUMBER OF STUDENTS ENROLLED IN SCHOOL.....	.08	.00	.00	.00
DAILY ATTENDANCE..........................	.22	.24	.05	.03
TEACHING CONDITIONS.......................	.39	.40	.00	-.02
PREFERENCE FOR HIGH ABILITY STUDENTS......	.30	.29	.08	.06
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP..	.48	.49	.13	.09
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.48	.49	.14	.10
PCT WHITE STUDENTS IN TEACHER'S CLASS.....	.49	.51	.09	.02
TEACHER'S VOCABULARY SCORE................	.43	.43	.15	.13
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE.	.52	.52	.33	.34
STUDENT BODY'S SOCIO-ECONOMIC STATUS......	.60	.60	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE.......	.41	.42	.23	.24
STUDENT BODY'S FAMILY STRUCTURE+STABILITY.	.60	.61	.00	.00
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES..	.48	.48	.28	.28
STUDENT BODY'S ACHIEVEMENT LEVEL..........	.52	.53	.13	.11
PROPORTION OF FEMALES IN STUDENT BODY.....	.40	.40	.25	.26
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION..	.53	.55	.09	.00
STUDENT BODY'S KINDERGARTEN ATTENDANCE....	.42	.41	.21	.22
NURSERY SCHOOL ATTENDANCE.................	.29	.30	.15	.16
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME..	.48	.49	.26	.27
PARENT SPKS. A FOREIGN LANGUAGE AT HOME...	.44	.45	.20	.20
SQUARED MULTIPLE CORRELATION OF THE ...... VARIABLES PARTIALED OUT WITH THE .... DEPENDENT VARIABLE........................	.00	.01	.50	.50

TABLE XI.5.1.-PARTIAL CORRELATIONS OF THE SCHOOL ACHIEVEMENT LEVELS AT THE TWELFTH GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
SPECIALIZED STAFF AND SERVICES	.21	.33	.10	.18
PUPIL ASSIGNMENT	.12	.12	.00	-.02
AVAILABILITY OF TEXTS	.22	.22	.03	.08
COMPULSORY ATTENDANCE LAW	.27	.27	.21	.09
PUPIL/TEACHER RATIO	-.20	-.21	-.01	-.06
TEACHER EXAMINATIONS	-.18	-.18	-.08	-.06
NUMBER OF STUDENTS ENROLLED IN SCHOOL	-.01	.00	.00	.00
SCOPE AND SEVERITY OF SCHOOL PROBLEMS	-.20	-.21	-.03	.03
DAILY ATTENDANCE	.27	.27	.18	.02
PRINCIPAL'S ESTIMATE OF SCHOOL REPUTATION	.24	.26	.05	.05
TEACHING CONDITIONS	.53	.53	.17	.21
TEACHER'S SOCIO-ECONOMIC BACKGROUND	.28	.28	.14	-.05
TEACHER'S COLLEGE ATTENDED	.33	.33	.14	.03
TEACHING RELATED ACTIVITIES	-.23	-.23	-.18	.05
PREFERENCE FOR HIGH ABILITY STUDENTS	.40	.40	.04	-.02
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.74	.75	.51	-.02
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.76	.76	.54	.06
TEACHER'S SALARY	.36	.40	.25	.23
PCT WHITE STUDENTS IN TEACHER'S CLASS	.78	.79	.56	.06
TEACHER'S VOCABULARY SCORE	.65	.65	.35	.07
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE	-.23	-.23	-.23	.02
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.81	.84	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE	.62	.62	.33	.27
STUDENT BODY'S FAMILY STRUCTURE+STABILITY	.63	.63	.00	.00
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES	.34	.34	-.14	.28
STUDENT BODY'S STUDY HABITS	.22	.22	-.36	-.18
PROPORTION OF FEMALES IN STUDENT BODY	.22	.22	-.26	-.20
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.40	.42	.09	.15
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.33	.33	-.18	-.02
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.09	.09	-.24	-.18
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.80	.80	.59	.00
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.00	.73	.83

TABLE XI.5.2.-PARTIAL CORRELATIONS OF SCHOOL ACHIEVEMENT LEVELS AT THE NINTH GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
SPECIALIZED STAFF AND SERVICES	.31	.30	.09	.23
PUPIL ASSIGNMENT	.21	.20	.00	.01
AVAILABILITY OF TEXTS	.21	.21	.09	.08
COMPULSORY ATTENDANCE LAW	.40	.40	.23	.22
PUPIL/TEACHER RATIO	-.34	-.35	-.23	-.30
TEACHER EXAMINATIONS	-.14	-.19	-.07	-.07
NUMBER OF STUDENTS ENROLLED IN SCHOOL	.04	.00	.00	.00
SCOPE AND SEVERITY OF SCHOOL PROBLEMS	-.22	-.23	-.11	-.01
DAILY ATTENDANCE	.43	.44	.13	.02
PRINCIPAL'S ESTIMATE OF SCHOOL REPUTATION	.27	.26	.00	-.03
TEACHING CONDITIONS	.47	.47	.11	.01
TEACHER'S SOCIO-ECONOMIC BACKGROUND	.33	.32	.06	.04
TEACHER'S COLLEGE ATTENDED	.31	.31	.13	.05
TEACHING RELATED ACTIVITIES	-.30	-.30	-.17	.01
PREFERENCE FOR HIGH ABILITY STUDENTS	.32	.32	.09	-.03
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.77	.77	.60	.17
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.76	.76	.60	.18
TEACHER'S SALARY	.24	.24	.07	.17
PCT WHITE STUDENTS IN TEACHER'S CLASS	.75	.76	.48	-.13
TEACHER'S VOCABULARY SCORE	.53	.53	.37	.21
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE	.31	.31	-.38	-.17
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.82	.82	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE	.64	.65	.18	.20
STUDENT BODY'S FAMILY STRUCTURE+STABILITY	.66	.67	.00	.00
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES	.50	.50	-.19	.18
STUDENT BODY'S STUDY HABITS	.46	.46	-.31	-.05
PROPORTION OF FEMALES IN STUDENT BODY	.28	.28	-.26	-.09
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.84	.85	.64	.00
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.46	.47	-.10	.13
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.43	.43	-.30	-.10
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.23	.24	-.41	-.28
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.00	.70	.82

TABLE XI.5.3.-PARTIAL CORRELATIONS OF SCHOOL ACHIEVEMENT LEVELS AT THE SIXTH GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
SPECIALIZED STAFF AND SERVICES	.20	.25	.04	.10
PUPIL ASSIGNMENT	.21	.70	.38	.00
AVAILABILITY OF TEXTS	.19	.18	.11	.07
COMPULSORY ATTENDANCE LAW	.34	.13	-.06	-.04
PUPIL/TEACHER RATIO	-.12	-.12	-.12	-.14
TEACHER EXAMINATIONS	-.21	-.21	-.13	-.09
NUMBER OF STUDENTS ENROLLED IN SCHOOL	-.03	.00	.00	.00
SCOPE AND SEVERITY OF SCHOOL PROBLEMS	-.19	-.19	-.07	-.02
DAILY ATTENDANCE	.36	-.19	-.07	-.02
PRINCIPAL'S ESTIMATE OF SCHOOL REPUTATION.	.28	.28	.02	.01
TEACHING CONDITIONS	.59	.59	.18	.11
TEACHER'S SOCIO-ECONOMIC BACKGROUND	.29	.31	.00	-.01
TEACHER'S COLLEGE ATTENDED	.29	.30	.13	.10
TEACHING RELATED ACTIVITIES	-.18	-.18	-.10	.01
PREFERENCE FOR HIGH ABILITY STUDENTS	.38	.39	.08	.01
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.73	.73	.47	.18
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.70	.70	.45	.18
TEACHER'S SALARY	.27	.29	.10	.21
PCT WHITE STUDENTS IN TEACHER'S CLASS	.73	.73	.41	-.03
TEACHER'S VOCABULARY SCORE	.62	.62	.34	.25
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE.	.50	.50	-.01	.03
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.82	.82	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE	.60	.60	.06	.11
STUDENT BODY'S FAMILY STRUCTURE+STABILITY.	.67	.67	.00	.00
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES	.64	.64	.15	.25
STUDENT BODY'S STUDY HABITS	.59	.59	.00	.11
PROPORTION OF FEMALES IN STUDENT BODY	.14	.14	-.13	-.04
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.80	.80	.49	.00
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.49	.52	.12	.09
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.42	.27	.08	.09
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.39	.18	.05	.06
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.00	.72	.79

TABLE XI.5.4.-PARTIAL CORRELATIONS OF SCHOOL ACHIEVEMENT LEVELS AT THE THIRD GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
SPECIALIZED STAFF AND SERVICES	.20	.25	.07	.10
PUPIL ASSIGNMENT	.16	.16	.05	.03
AVAILABILITY OF TEXTS	.14	.14	.06	.04
COMPULSORY ATTENDANCE LAW	.27	.27	.08	.06
PUPIL/TEACHER RATIO	-.11	-.10	-.08	-.08
NUMBER OF STUDENTS ENROLLED IN SCHOOL	-.03	.00	.00	.00
SCOPE AND SEVERITY OF SCHOOL PROBLEMS	-.17	-.17	-.06	-.06
DAILY ATTENDANCE	.31	.31	.13	.10
PRINCIPAL'S ESTIMATE OF SCHOOL REPUTATION.	.25	.25	.08	.08
TEACHING CONDITIONS	.55	.55	.18	.14
TEACHER'S SOCIO-ECONOMIC BACKGROUND	.20	.21	-.02	-.04
TEACHER'S COLLEGE ATTENDED	.19	.20	.04	.01
TEACHING RELATED ACTIVITIES	-.14	-.14	-.05	.01
PREFERENCE FOR HIGH ABILITY STUDENTS	.32	.32	.09	.04
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.53	.53	.20	.01
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.51	.51	.20	.01
TEACHER'S SALARY	.19	.21	.05	.08
PCT WHITE STUDENTS IN TEACHER'S CLASS	.58	.58	.22	-.01
TEACHER'S VOCABULARY SCORE	.47	.47	.21	.13
STUDNT BODY'S EXPECTATIONS FOR EXCELLENCE.	.25	.26	.00	.00
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.68	.68	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE	.22	.22	.03	.05
STUDENT BODY'S FAMILY STRUCTURE+STABILITY.	.46	.46	.00	.00
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES	.36	.36	.14	.14
STUDENT BODY'S STUDY HABITS	.52	.53	.13	.11
PROPORTION OF FEMALES IN STUDENT BODY	.12	.11	-.07	-.04
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.63	.63	.27	.00
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.33	.34	.08	.10
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.28	.27	.01	.02
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.27	.27	.00	.01
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.00	.49	.53

TABLE XI.5.5.-PARTIAL CORRELATIONS OF SCHOOL ACHIEVEMENT LEVELS AT THE FIRST GRADE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
PUPIL ASSIGNMENT	.16	.53	.27	.10
AVAILABILITY OF TEXTS	.16	.15	.07	.08
COMPULSORY ATTENDANCE LAW	.30	.13	.02	.04
PUPIL/TEACHER RATIO	-.14	-.12	-.07	-.07
TEACHER EXAMINATIONS	-.22	-.21	-.12	-.10
NUMBER OF STUDENTS ENROLLED IN SCHOOL	-.11	.00	.00	.00
SCOPE AND SEVERITY OF SCHOOL PROBLEMS	-.22	-.20	-.10	-.08
DAILY ATTENDANCE	.31	-.20	-.10	-.08
PRINCIPAL'S ESTIMATE OF SCHOOL REPUTATION.	.18	.18	.05	.04
TEACHING CONDITIONS	.50	.50	.20	.17
TEACHER'S SOCIO-ECONOMIC BACKGROUND	.13	.16	-.05	-.07
TEACHER'S COLLEGE ATTENDED	.17	.19	.02	-.03
TEACHING RELATED ACTIVITIES	-.16	-.16	-.08	-.01
PREFERENCE FOR HIGH ABILITY STUDENTS	.29	.31	.12	.07
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.52	.51	.24	.05
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS.	.49	.48	.22	.03
TEACHER'S SALARY	.16	.20	.06	.09
PCT WHITE STUDENTS IN TEACHER'S CLASS	.56	.56	.28	.11
TEACHER'S VOCABULARY SCORE	.44	.45	.22	.13
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.61	.61	.00	.00
STUDENT BODY'S FAMILY STRUCTURE+STABILITY.	.37	.36	.00	.00
PROPORTION OF FEMALES IN STUDENT BODY	.04	.03	.08	.04
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.56	.56	.27	.00
STUDENT BODY'S KINDERGARTEN ATTENDANCE	.33	.36	.17	.17
STUDENT SPKS. A FOREIGN LANGUAGE AT HOME	.08	.25	.10	.07
PARENT SPKS. A FOREIGN LANGUAGE AT HOME	.07	.18	.07	.04
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.01	.39	.44

TABLE XI.6.1.- PARTIAL CORRELATIONS OF THE PERCENT OF TWELFTH GRADE GRADUATES GOING ON TO A TWO OR FOUR YEAR COLLEGE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
PLANT AND PHYSICAL FACILITIES	.25	.24	.21	.21
INSTRUCTIONAL FACILITIES	.23	.24	-.03	-.03
NUMBER OF HRS. HOMEWORK EXPECTED PER DAY	.21	.20	.17	.17
NUMBER OF STUDENTS ENROLLED IN SCHOOL	.06	.00	.00	.00
PRINCIPAL'S ESTIMATE OF SCHOOL REPUTATION	.24	.23	.08	.08
PCT BOYS DROP-OUT	-.26	-.27	-.13	-.14
TEACHING CONDITIONS	.58	.58	.40	.40
LOCALISM OF TEACHER'S BACKGROUND	.23	.25	.02	.01
PREFERENCE FOR HIGH ABILITY STUDENTS	.40	.40	.16	.18
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	.31	.32	-.08	.07
PCT WHTE STUDENT AT TEACH'S UNDERGRAD INS	.30	.31	-.10	.02
PCT WHITE STUDENTS IN TEACHER'S CLASS	.31	.32	-.11	.01
TEACHER'S VOCABULARY SCORE	.32	.32	-.06	.00
STUDENT BODY'S SOCIO-ECONOMIC STATUS	.61	.61	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE	.36	.38	.12	.15
STUDENT BODY'S FAMILY STRUCTURE+STABILITY	.34	.35	.00	.00
STUDENT BODY'S EDUCATIONAL PLANS+DESIRES	.60	.60	.45	.45
STUDENT BODY'S STUDY HABITS	.25	.27	.07	.02
STUDENT BODY'S ACHIEVEMENT LEVEL	.56	.57	.13	.26
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	.30	.31	-.13	.00
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.00	.37	.38

TABLE XI.6.2.- PARTIAL CORRELATIONS OF THE PERCENT OF TWELFTH GRADE NON-WHITE GRADUATES GOING ON TO A TWO OR FOUR YEAR COLLEGE

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
PCT NON-WHITE ENTERING VOCATIONAL TRNG	.51	.50	.49	.48
NUMBER OF STUDENTS ENROLLED IN SCHOOL	.16	.00	.00	.00
NUMBER OF YRS SNCE NON-WHITES ENTERED SCH.	.25	.21	.24	.24
AGE OF BUILDING	-.22	-.20	-.19	-.16
TEACHER'S TRAINING	.21	.15	.16	.20
TEACHER'S ASSIGN. TO PRESENT SCHOOL	-.23	-.18	-.16	-.13
PCT WHITE STUDENTS IN TEACHER'S CLASS	-.24	-.22	-.19	-.11
STUDENT BODY'S SOCIO-ECONOMIC STATUS	-.07	-.11	.00	.00
STUDENT BODY'S FAMILY STRUCTURE+STABILITY	-.10	-.08	.00	.00
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	-.21	-.19	-.16	.00
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.02	.04	.06

TABLE XI.6.3.- PARTIAL CORRELATIONS OF THE PERCENT OF TWELFTH GRADE GRADUATES GOING ON TO POST SECONDARY VOCATIONAL TRAINING

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
INSTRUCTIONAL FACILITIES....................	.23	.16	.14	.14
SPECIALIZED STAFF AND SERVICES............	.20	.11	.12	.12
PUPIL/TEACHER RATIO........................	.20	.15	.17	.17
NUMBER OF STUDENTS ENROLLED IN SCHOOL.....	.18	.00	.00	.00
STUDENT BODY'S SOCIO-ECONOMIC STATUS......	.12	.08	.00	.00
STUDENT BODY'S FAMILY STRUCTURE+STABILITY.	.10	.13	.00	.00
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION..	.11	.13	.08	.00
SQUARED MULTIPLE CORRELATION OF THE ...... VARIABLES PARTIALED OUT WITH THE .... DEPENDENT VARIABLE......................	.00	.03	.04	.05

TABLE XI.6.4.- PARTIAL CORRELATIONS OF THE PERCENT OF TWELFTH GRADE NON-WHITE GRADS GOING ON TO POST-SECONDARY VOC TRAINING

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
PCT NON-WHITE ENTERING COLLEGE............	.51	.50	.49	.48
NUMBER OF STUDENTS ENROLLED IN SCHOOL.....	.16	.00	.00	.00
PCT WHITE STUDENTS IN TEACHER'S CLASS.....	-.21	-.19	-.15	-.06
STUDENT BODY'S SOCIO-ECONOMIC STATUS......	-.13	-.17	.00	.00
STUDENT BODY'S FAMILY STRUCTURE+STABILITY.	-.06	-.04	.00	.00
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION..	-.20	-.19	-.14	.00
SQUARED MULTIPLE CORRELATION OF THE ...... VARIABLES PARTIALED OUT WITH THE .... DEPENDENT VARIABLE......................	.00	.02	.06	.08

TABLE XI.6.5.-PARTIAL CORRELATIONS OF THE PERCENT OF DROPOUTS

	ZERO ORDER CORRELNS	SIZE	SIZE + HB	SIZE + HB + RACE
TRACKING AND ABILITY GROUPING	.21	.15	.13	.13
AVAILABILITY OF TEXTS	-.21	-.20	-.13	-.14
PCT ENTERING COLLEGE	-.26	-.27	-.13	-.14
PUPIL/TEACHER RATIO	.19	.14	.07	.08
TEACHER EXAMINATIONS	.20	.17	.12	.12
NUMBER OF STUDENTS ENROLLED IN SCHOOL	.20	.00	.00	.00
SCOPE AND SEVERITY OF SCHOOL PROBLEMS	.28	.24	.18	.17
DAILY ATTENDANCE	-.28	-.26	-.21	-.19
TEACHING CONDITIONS	-.28	-.27	-.14	-.14
PREFERENCE FOR HIGH ABILITY STUDENTS	-.23	-.26	-.15	-.14
TEACHER'S RACIAL-ETHNIC GROUP MEMBERSHIP	-.23	-.23	-.03	.14
TEACHER'S ASSIGN. TO PRESENT SCHOOL	-.26	-.21	-.10	-.09
PCT WHITE STUDENTS IN TEACHER'S CLASS	-.32	-.30	-.13	-.06
STUDENT BODY'S SOCIO-ECONOMIC STATUS	-.23	-.29	.00	.00
STUDENT BODY'S ATTITUDE TOWARD LIFE	-.31	-.28	-.13	-.12
STUDENT BODY'S FAMILY STRUCTURE+STABILITY	-.27	-.25	.00	.00
STUDENT BODY'S ACHIEVEMENT LEVEL	-.30	-.30	-.08	-.02
STUDENT BODY'S RACIAL-ETHNIC COMPOSITION	-.30	-.29	-.11	.00
SQUARED MULTIPLE CORRELATION OF THE VARIABLES PARTIALED OUT WITH THE DEPENDENT VARIABLE	.00	.04	.13	.14

XII A Comparison of Criterion Scaled and Judgmentally Scaled Variables With Respect to Their Variance, Factor Structure and School Correlations for Ninth Grade Schools

1. Statement of the Problem and Scaling Procedure

This side study attempted to determine the extent to which judgmentally scaled variables as opposed to criterion scaled variables would yield different results at different stages in the analysis. Since the school variables were not criterion scaled and in view of the fact that the criterion scaling technique maximized the linear relationship of student background items with achievement it was of particular interest to see if one would attribute more of the variance in achievement to the student's background using criterion scaled variables than using judgmentally scaled variables.

Since most of the developmental work had been done with ninth grade students and their schools these same students were used in this study. The judgmental scaling technique employed was to assign codes that were meaningful on an a priori basis but then to use the results from the criterion scale analyses to determine a code value for the "don't knows" and for those students who failed to answer that item. For example, the item of "Father's Education" was judgmentally scaled as follows:

19. How far in school did your father go?

		Judgmental Scale Value
(A)	None or some grade school	4
(B)	Completed grade school	8
(C)	Some high school but did not graduate	10
(D)	Graduated from high school	12
(E)	Technical or business school after high school	14
(F)	Some college but less than 4 years	16
(G)	Graduated from a 4 year college	18
(I)	Don't know	4
(-)	Non-response	4

The code values assigned reflect increasingly more years of education. The results of the criterion scale analysis indicated that the achievement levels of the students who indicated "Don't know" or who failed to respond were close to those students who said their father completed "None or some grade school" and consequently these students were assigned a judgmental code value of 4. In a sense, therefore, this might be termed a quasi-criterion scaled variable since the results of a criterion scale analysis were used as a guide in assigning some of the code or scale values. The judgmental code values are given at the end of this study in section 7.1.

Comparisons are made in the following sections of means, variances and intercorrelations of the criterion scaled variables with these judgmentally scaled variables.

2. Comparison of Differences in Means and Variances for Criterion Scaled and Judgmentally Scaled Variables

The means, variances and intercorrelations of the judgmentally scaled variables for a random sample of 12,000 ninth grade students are given in section 7.2.

A comparison of the means and variances of the questionnaire items of variables when they are criterion scaled and when they are judgmentally scaled are given in Table XII.2 When there is a scale of the variable as in Father's Education ranging from four to eighteen years completed then the means of the judgmentally scaled variables are more readily interpretable. When there isn't any natural scale of the variable, such as Yes, No, and Maybe alternatives to attitudinal items then the resultant means are about equally interpretable for judgmental and criterion scaled variables.

The variances of the variables or items are almost always greater for the criterion scaled than for the judgmentally scaled variables. The only notable exceptions where the variances of the judgmentally scaled variables are larger than those for the criterion scaled variables are: Father's Education; Last Change School; Number of Books Read During the Summer; Extracurricular Activities; Outside Job and; Kind of Job Preferred or Level of Job Aspiration.

3. Comparison of the Percent of Variance in Criterion Scaled and Judgmentally Scaled Variables That is Associated With Verbal Achievement

Table XII.3 compares the zero order correlations of the criterion scaled and the judgmentally scaled variables with verbal achievement. The column to the right in Table XII.3 gives the absolute value of the differences in the percent of variance associated with verbal achievement for criterion scaled and judgmentally scaled variables. (At this stage of analysis correlations were only available for the individual tests but not for the achievement composite). This value is obtained by squaring the zero order correlations and then taking their absolute differences (the differences in the sign of the zero order correlations only indicate that the magnitude of the code values was reversed, for example, "few persons in the home" was given a high value by the criterion scaling technique but was given a low value by the judgmental scaling).

Inspection of these columns indicates that the criterion scaling technique resulted in slightly larger zero order correlations except for the special measures of "Appliances in the Home" and "Reading Materials in the Home" which are themselves composite measures.

TABLE XII.2 - Comparison of Ninth Grade Student Questionnaire Means and Variances of Criterion Scaled and Judgmentally Scaled Variables for a Sample of Twelve Thousand

		MEANS			SIGMAS (N-1)		ABSOLUTE DIFFERENCES
VARIABLE IN MATRIX	ITEM NUMBER IN QUESTIONNAIRE	CRITERION SCALED	JUDGMENTALLY SCALED	TITLE	CRITERION SCALED	JUDGMENTALLY SCALED	IN VARIANCES (SIGMAS SQUARED)
1	3	50.1342	1.4903	Sex	.4914	.4999	.0034
2	4	50.1636	.7978	Age	3.5190	.4017	12.2220
3	5	50.1354	2.0755	Area Most of Life	1.1191	.3327	1.1417
4	6	50.2700	2.2128	Type of Community	1.8148	.7665	2.7060
5	7 & 8	50.1490	1.7490	Race	4.5911	.4336	20.8902
6	9	50.1456	5.7222	Number in Home	2.5416	2.2058	1.5942
7	10	50.1727	3.5507	Number of Siblings	3.0754	2.6010	2.6929
8	11	50.1758	1.6911	Older Siblings	2.5182	2.0154	2.2795
9	12	50.2044	.3991	Number Dropped Out High School	2.9779	1.1194	7.6148
10	13	50.1653	1.8473	Foreign Language Parent	1.3252	.3597	1.6268
11	14	50.1608	1.7523	Foreign Language Student	1.3519	.4317	1.6413
12	15	50.1331	6.3129	Rooms In Home	2.5460	1.9554	2.6585
13	16	50.1793	1.7848	Acts As Father	2.2836	.4110	5.0459
14	17	50.1946	1.9158	Acts As Mother	1.8471	.2776	3.3347
15	18	50.3879	6.6183	Father's Occupation	3.5542	2.9379	4.0011

Table XII.2 Continued

		MEANS			SIGMAS (N-1)		ABSOLUTE DIFFERENCES IN VARIANCES (SIGMAS SQUARED)
VARIABLE IN MATRIX	ITEM NUMBER IN QUESTIONNAIRE	CRITERION SCALED	JUDGMENTALLY SCALED	TITLE	CRITERION SCALED	JUDGMENTALLY SCALED	
16	19	50.1953	10.0535	Father's Education	3.7445	4.1114	2.8823
17	20	50.1918	10.5181	Mother's Education	3.7172	3.5272	1.3764
18	22	50.2598	1.7864	Source of Income	2.3249	.4099	5.2371
19	23	50.1767	2.2444	Mother Work	.7377	.8770	.2249
20	24	50.1677	2.7383	Mother's Interest	2.7241	.5103	7.1603
21	25	50.1975	2.7255	Father's Interest	2.6011	.5118	6.5038
22	26	50.1943	3.2974	School Discussions	1.0283	.9940	.0694
23	27	50.2060	14.7298	Father's Desires	3.6198	1.8620	9.6359
24	28	50.1893	14.8919	Mother's Desires	3.5437	1.8279	9.2166
25	29	50.1726	.3420	PTA Attendance	1.3735	.3538	1.7613
26	30	50.1794	1.4948	Pre-School Reading	2.3915	.6180	5.3373
27	SM#1	296.7390	11.2448	Appliances in the Home	32.4136	1.5925	1048.1054
28	SM#2	246.5502	125.1863	Reading Materials in the Home	28.4183	116.4272	12747.6931
29	44	50.1918	1.5793	Kindergarten	1.7912	.4937	2.9647
30	46	50.2248	1.6607	Changes in School	.8845	1.8384	2.5974
31	47	50.2634	20.9014	Last Change School	.9297	23.5728	554.8126

Table XII.2 Continued

VARIABLE IN MATRIX	ITEM NUMBER IN QUESTIONNAIRE	MEANS		TITLE	SIGMAS (N-1)		ABSOLUTE DIFFERENCES IN VARIANCES (SIGMAS SQUARED)
		CRITERION SCALED	JUDGMENTALLY SCALED		CRITERION SCALED	JUDGMENTALLY SCALED	
32	48	50.2526	14.9306	Desired Education	4.0070	2.1494	11.4361
33	53	50.2943	3.0881	College Plans	3.2347	.9619	9.5380
34	54	50.2727	6.7548	Read Books Summer	1.5968	7.4406	52.81278
35	55	50.2771	1.8079	Hours Watching TV	2.1261	.7601	3.9425
36	56	50.3135	4.0035	Leave School Now	2.5607	1.0698	5.4127
37	57	50.3117	3.2186	Good Student	2.7421	.9062	6.6979
38	58	50.3240	1.6370	Studying Time	1.6114	1.0753	1.4403
39	60	50.3022	3.7240	Voluntary Absences	1.4821	.6684	1.7499
40	SM#3	1.0567	5.7876	Extra-Curricular Activities	1.0000	1.4413	2.0773
41	86	50.5595	4.0032	Outside Job	.7922	6.6264	43.2816
42	87	50.5325	2.4235	Social Rating	1.2681	.5824	1.2689
43	88	50.6093	3.4943	Brightness	3.5998	.8303	12.2692
44	91	50.6355	3.2512	Rate in Class	1.7834	.8108	2.5231
45	92	50.6606	1.9771	Life Condition	2.3930	.6993	5.2374
46	93	50.6313	2.6601	Work For Success	4.4195	.6607	19.0955
47	94	50.6761	2.2912	Getting Ahead	2.9583	.8080	8.0987

Table XII.2 Continued

		MEANS			SIGMAS (N-1)		ABSOLUTE DIFFERENCES
VARIABLE IN MATRIX	ITEM NUMBER IN QUESTIONNAIRE	CRITERION SCALED	JUDGMENTALLY SCALED	TITLE	CRITERION SCALED	JUDGMENTALLY SCALED	IN VARIANCES (SIGMAS SQUARED
48	95	50.6885	1.9135	Success in Life	1.0475	.8368	.3970
49	96	50.6999	2.2339	Education in Job	2.1126	.7799	3.8548
50	97	50.7068	1.9932	Sacrifice	2.1996	.7749	4.2378
51	98	50.6726	2.2593	Want to Change	2.1231	.8246	3.8276
52	99	50.7060	1.9915	Learning Problem	2.0595	.8937	3.4428
53	100	50.7122	2.1541	Teaching Rate	2.6758	.8286	6.4733
54	101	50.7242	2.4919	Tough Job	.8607	.6917	.2624
55	102	50.7202	2.4816	Ability to do Well	1.0399	.6850	.6122
56	103	50.7368	2.5634	Successful Life	3.3787	.6715	10.9647
57	106	50.9102	7.4895	Job Preferred	3.4868	4.1337	4.9297

TABLE XII.3 - Comparison of the Percent of Variance in Criterion Scaled and Judgmentally Scaled Variables That is Associated With Verbal Achievement

VARIABLE IN MATRIX	ITEM NUMBER IN QUESTIONNAIRE	ZERO ORDER r's WITH VERBAL(60) ACHIEVEMENT		TITLE	PERCENT VARIANCE ABSOLUTE DIFFERENCE
		CRITERION SCALED	JUDGMENTALLY SCALED		
1	3	.0249	.0294	Sex	.0002
2	4	.3301	.3222	Age	.0052
3	5	.0893	.0721	Area Most of Life	.0028
4	6	.1936	.1863	Type of Community	.0028
5	7 & 8	.4347	.4300	Race	.0041
6	9	.2655	-.2382	Number in Home	.0137
7	10	.3084	-.2959	Number of Siblings	.0076
8	11	.2503	-.2444	Older Siblings	.0029
9	12	.2886	-.2247	Number Dropped Out High School	.0328
10	13	.1056	.1083	Foreign Language Parent	.0006
11	14	.1166	-.0538	Foreign Language Student	.0107
12	15	.2283	.1936	Rooms in Home	.0146
13	16	.2041	.2011	Acts as Father	.0012
14	17	.1598	.1545	Acts as Mother	.0017

TABLE XII.3 Continued

VARIABLE IN MATRIX	ITEM NUMBER IN QUESTIONNAIRE	ZERO ORDER r's WITH VERBAL (60)		TITLE	PERCENT VARIANCE ABSOLUTE DIFFERENCE
		CRITERION SCALED	JUDGMENTALLY SCALED		
15	18	.3604	.3431	Father's Occupation	.0122
16	19	.3808	.3754	Father's Education	.0041
17	20	.3703	.3547	Mother's Education	.0113
18	22	.2022	.1899	Source of Income	.0048
19	23	.0417	.0450	Mother Work	.0003
20	24	.2506	.2529	Mother's Interest	.0012
21	25	.2468	.2496	Father's Interest	.0014
22	26	.0876	.0908	School Discussions	.0006
23	27	.3564	.3480	Father's Desires	.0059
24	28	.3428	.3382	Mother's Desires	.0031
25	29	.1344	.1211	PTA Attendance	.0034
26	30	.2183	.2168	Pre-School Reading	.0006
27	SM#1	.1982	.3148	Appliances in the Home	.0598
28	SM#2	.2181	.2953	Reading Materials in the Home	.0396
29	44	.1754	.1782	Kindergarten	.0010
30	46	.0603	-.0470	Changes in School	.0014
31	47	.0726	.0319	Last Change in School	.0042
32	48	.3914	.3908	Desired Education	.0005

TABLE XII.3 - Continued

VARIABLE IN MATRIX	ITEM NUMBER IN QUESTIONNAIRE	ZERO ORDER r's WITH VERBAL (60) CRITERION SCALED	ZERO ORDER r's WITH VERBAL (60) JUDGMENTALLY SCALED	TITLE	PERCENT VARIANCE ABSOLUTE DIFFERENCE
33	53	.3220	.3154	College Plans	.0042
34	54	.1812	.1579	Read Books Summer	.0079
35	55	.1931	.1785	Hours Watching T.V.	.0054
36	56	.2290	.2288	Leave School Now	.0001
37	57	.2366	.2305	Good Student	.0028
38	58	.1196	.0096	Studying Time	.0142
39	60	.0898	.0869	Voluntary Absences	.0005
40	SM$^{\#}$3	.0084	.0865	Extracurricula Activities	.0074
41	86	.0549	-.0449	Outside Job	.0010
42	97	.0893	.0879	Social Rating	.0002
43	88	.3532	.3482	Brightness	.0035
44	91	.1679	.1362	Rate in Class	.0096
45	92	.2758	.2683	Life Condition	.0041
46	93	.4307	.4156	Work for Success	.0128
47	94	.2936	.2904	Getting Ahead	.0019
48	95	.1039	.1097	Success in Life	.0012
49	96	.2087	.2100	Education in Job	.0005
50	97	.2267	.2283	Sacrafice	.0007
51	98	.1966	.1976	Want to Change	.0004

TABLE XII.3 Continued

VARIABLE IN MATRIX	ITEM NUMBER IN QUESTIONNAIRE	ZERO ORDER r's WITH VERBAL (60) CRITERION SCALED	ZERO ORDER r's WITH VERBAL (60) JUDGMENTALLY SCALED	TITLE	PERCENT VARIANCE ABSOLUTE DIFFERENCE
52	99	.2064	.1738	Learning Problem	.0124
53	100	.2620	.2574	Teaching Rate	.0024
54	101	.0501	.0537	Tough Job	.0004
55	102	.0742	.0770	Ability To Do Well	.0004
56	103	.3257	.3181	Successful Life	.0049
57	106	.3510	.2981	Job Preferred	.0343

4. Comparison of the Percent of Variance Accounted for by the Principal Components, the Factor Structure and the Index Weights for Criterion Scaled and Judgmentally Scaled Variables

Table XII.4.1 compares the percent of variance accounted for by the principal components of the criterion scaled and judgmentally scaled variables. Inspection of this table shows that the first three principal components of the criterion scaled variables account for slightly more of the variance than do the components for the judgmentally scaled variables (25.64 percent versus 23.48 percent for the first three components). This initial advantage for the criterion scaled variables tends to diminish after about the first twenty-five components. Ten components with a root of one or greater were obtained from the criterion scaled variables while 13 components with a root of one or greater were retained from the judgmentally scaled variables.

The varimax factors obtained from rotating the principal components that had a root of one or greater are given in section 7.3. The same factor interpretations were obtained using the intercorrelations from the judgmentally scaled variables as were obtained using the intercorrelations from the criterion scaled variables. However, the factors were more clearly interpretable using judgmentally scaled rather than criterion scaled variables. A comparison of the index weights obtained using these two techniques is given in the following table.

Inspection of Table XII.4.2 shows that the index weights obtained are fairly to highly similar for most of the indices. The notable exceptions are for: Index III: Social Confidence for which variables 41 and 48 did not appear and; Index VII: Study Habits for which variable 35 did not appear. In computing the index scores the weights for these latter variables were set equal to zero.

5. Comparison of Differences in Index Variances, Intercorrelations and Correlations with Selected Other Variables for Criterion Scaled and Judgmentally Scaled Variables

Table XII.5.1 gives the index sigmas and differences in variances for the different indices. In every case, the sigma for the index comprised of criterion scaled variables is greater than for its counterpart comprised of judgmentally scaled variables.

Table XII.5.2 gives the index intercorrelations for the index comprised of criterion scaled variables and its counterpart comprised of judgmentally scaled variables. The values for the indices comprised of judgmentally scaled variables are directly below those for their criterion scaled counterpart. Inspection of this table shows that the index intercorrelations are lower for the indices comprised of judgmentally scaled variables.

TABLE XII.4.1 - Percent of Variance Accounted for by the Principal Components of the Criterion Scaled and Judgmentally Scaled Variables

CRITERION SCALED

INDEX	ROOT	PER CENT
1	7.6941	16.37
2	2.3478	21.37
3	2.0107	25.64
4	1.7443	29.36
5	1.4840	32.51
6	1.3613	35.41
7	1.2915	38.16
8	1.2160	40.74
9	1.0476	42.97
10	1.0236	45.15
11	0.9946	47.27
12	0.9838	49.36
13	0.9711	51.43
14	0.9596	53.47
15	0.9386	55.47
16	0.8964	57.37
17	0.8771	59.24
18	0.8611	61.07
19	0.8479	62.88
20	0.8367	64.66
21	0.8154	66.39
22	0.8016	68.10
23	0.7983	69.79
24	0.7786	71.45
25	0.7605	73.07
26	0.7562	74.68
27	0.7528	76.28
28	0.7226	77.82
29	0.7188	79.35
30	0.7096	80.86
31	0.7047	82.36
32	0.7039	83.85
33	0.6870	85.32
34	0.6672	86.73
35	0.6556	88.13
36	0.6542	89.52
37	0.6286	90.86
38	0.6062	92.15
39	0.5953	93.42
40	0.5839	94.66
41	0.5114	95.75
42	0.4666	96.74
43	0.4091	97.61
44	0.3966	98.45
45	0.2976	99.09
46	0.2718	99.66
47	0.1578	100.00

JUDGMENTALLY SCALED

INDEX	ROOT	PER CENT
1	6.9658	14.82
2	2.1471	19.39
3	1.9211	23.48
4	1.7090	27.11
5	1.4193	30.13
6	1.3854	33.08
7	1.2836	35.81
8	1.1716	38.30
9	1.1355	40.72
10	1.0752	43.01
11	1.0419	45.22
12	1.0243	47.40
13	1.0146	49.56
14	0.9882	51.67
15	0.9598	53.71
16	0.9414	55.71
17	0.9139	57.65
18	0.9066	59.58
19	0.8966	61.49
20	0.8692	63.34
21	0.8559	65.16
22	0.8522	66.97
23	0.8325	68.75
24	0.8205	70.49
25	0.8071	72.21
26	0.7972	73.91
27	0.7783	75.56
28	0.7608	77.18
29	0.7543	78.78
30	0.7504	80.38
31	0.7434	81.96
32	0.7261	83.51
33	0.7198	85.04
34	0.6954	86.52
35	0.6742	87.95
36	0.6601	89.36
37	0.6450	90.73
38	0.6359	92.08
39	0.6114	93.38
40	0.5820	94.62
41	0.5251	95.74
42	0.4759	96.75
43	0.3897	97.58
44	0.3751	98.38
45	0.3212	99.06
46	0.2778	99.65
47	0.1627	100.00

TABLE XII.4.2 Comparison of Index Weights Obtained From Varimax Factors of Criterion Scaled and Judgmentally Scaled Variables

VARIABLE NUMBER	TITLE	WEIGHTS CRITERION SCALED	 JUDGMENTALLY SCALED
	INDEX I: EXPECTATIONS FOR EXCELLENCE		
20	Mother's Desire for Child's Academic Excellence	.83	.85
21	Father's Desire for Child's Academic Excellence	.81	.84
37	Students Own Desire to Excel	.64	.54
44	Teacher's Expectations for Student to Excel	.50	.20*
	INDEX II: SOCIO-ECONOMIC STATUS		
4	Type of Community in Which Student Spent Most of Life	.53	.31*
7	Number of Siblings	.53	-.25*
12	Number of Rooms in the Home	.22*	-.50
15	Father's Occupational Level	.57	.60
16	Father's Educational Level	.66	.74
17	Mother's Educational Level	.64	.69
27	Appliances in the Home	.28**	.52**
28	Reading Materials in the Home	.29	.53
	INDEX III: SOCIAL CONFIDENCE		
41	Outside Work	.57	.01*
42	Social Rating	.31	.36*
48	Success in Life	.45	-.02*
54	Tough Job	.56	.56
55	Ability to Do Many Things Well	.51	.56

Table XII.4.2 Continued

		WEIGHTS	
VARIABLE NUMBER	TITLE	CRITERION SCALED	JUDGMENTALLY SCALED
	INDEX IV: ATTITUDE TOWARD LIFE		
45	Life Condition	.25*	.26
46	Work for Success	.41	.44
47	Difficulty Getting Ahead	.62	.62
49	Education in Job	.49	.52
50	Sacrifice to Get Ahead	.20*	.26*
51	Want to Change	.53	.53
52	Learning Problems	.56	.53
53	Teaching Rate	.57	.57
56	Successful Life	.60	.56
	INDEX V: FAMILY STRUCTURE AND STABILITY		
3	Area in Which Student Has Spent Most of Life	.10*	.04*
13	Who Acts as Your Father	.84	.83
14	Who Acts as Your Mother	.60	.54
18	Family's Source of Income	.73	.76
19	Mother's Work	.20*	.25*
31	Recency of Change in School	.20*	-.06*
	INDEX VI: EDUCATIONAL PLANS AND DESIRES		
23	Father's Desire for Child's Educational Level	.81	.80
24	Mother's Desire for Child's Educational Level	.82	.83
32	Student's Desire for Higher Education	.80	.80
33	Student's Plans for College	.74	.75
43	Brightness	.29	.26*
57	Occupational Level Preferred (or Aspired to)	.46	.45

Table XII.4.2 Continued

VARIABLE NUMBER	TITLE	WEIGHTS CRITERION SCALED	WEIGHTS JUDGMENTALLY SCALED
	INDEX VII: STUDY HABITS		
22	School Discussions With Parents	.34	.38
26	Pre-School Reading	.33	.29*
34	Number of Books Read During Summer	.48	.63
35	Number of Hours Watching TV	.49	-.01*
36	Attitude Towards School	.47	.38
38	Study Time	.62	.65
39	Voluntary Absences	.34*	.26*

*The single asterisk indicates that the variable had a higher weight on another index but that it was more meaningful on this index. The double asterisk indicates that the variable was not included in the factor analysis because it was so highly correlated with reading materials in the home (28) but was given almost the same weight as variable 28 when computing the index. The negative weights only indicate that the order of coding is reversed for judgmental than for criterion scaled variables.

TABLE XII.5.1 - Comparison of Differences in Variances for Indices Comprised of Criterion Scaled and Judgmentally Scaled Variables

INDEX TITLE	SIGMAS CRITERION SCALED	 JUDGMENTALLY SCALED	ABSOLUTE DIFFERENCES IN VARIANCE (SIGMAS SQUARED)
Expectations	2.5163	2.1514	1.7032
Socio-Economic Status	2.3873	2.2206	.7681
Social Confidence	5.7081	1.2299	31.0698
Attitude Toward Life	4.5767	2.7883	13.1725
Family Structure and Stability	2.3519	1.8176	2.2278
Educational Plans	3.3632	3.2397	.8146
Study Habits	2.8819	1.5833	5.7985

TABLE XII.5.2 - Comparison of Index Score Intercorrelations for Indices Comprised of Criterion Scaled (C) and Judgmentally Scaled Variables (J)

			I	II	III	IV	V	VI	VII
I	Expectations	C	1.00	.40	.45	.47	.37	.54	.54
		J	1.00	.33	.33	.33	.25	.52	.41
II	Socio-Economic Status	C	.40	1.00	.31	.38	.47	.54	.45
		J	.33	1.00	.24	.36	.33	.51	.31
III	Social Confidence	C	.45	.31	1.00	.85	.33	.36	.52
		J	.33	.24	1.00	.50	.17	.37	.34
IV	Attitude Toward Life	C	.47	.38	.85	1.00	.33	.45	.50
		J	.33	.36	.50	1.00	.23	.44	.35
V	Family Structure & Stability	C	.37	.47	.33	.33	1.00	.33	.48
		J	.25	.33	.17	.23	1.00	.24	.20
VI	Educational Desires and Plans	C	.54	.54	.36	.45	.33	1.00	.50
		J	.52	.51	.37	.44	.24	1.00	.47
VII	Study Habits	C	.54	.45	.52	.50	.48	.50	1.00
		J	.41	.31	.34	.35	.20	.47	1.00

Table XII.5.3 gives the correlations of the indices with Achievement, Sex and Racial-Ethnic Differences. Inspection of this table shows that in almost every case the indices comprised of criterion scaled variables are more highly correlated with Achievement, Sex and Racial-Ethnic Differences than are the indices comprised of judgmentally scaled variables. The one exception is for the index called "Attitude Toward Life". However, the "D" column which is the difference in the percent of variance (or the difference in the squared correlations) shows that these are almost always small to moderate differences.

6. Comparison of the School Mean Index Intercorrelations for Indices Comprised of Criterion Scaled and Judgmentally Scaled Variables

Table XII.6.1 gives the index intercorrelations obtained by computing the index mean for each school and then intercorrelating these mean values. There were 923 schools used in these analyses. Inspection of this table shows that the index intercorrelations tend to be lower for the indices comprised of criterion scaled variables than for those comprised of judgmentally scaled variables. The multiple correlation of the School variables is about the same for SES, REC, EXP, EDPLN, STDY and ACHV but is slightly larger for the indices comprised of judgmentally scaled variables for FSS and ATTUD.

Table XII.6.2 gives the squared multiple correlations of the School variables and the three Student Body Social Background variables of Socio-Economic Status, Family Structure and Racial-Ethnic Composition with Achievement and the other motivational and attitudinal indices (the index called Social Confidence was not carried along in the original analyses due to its being so highly correlated with Attitude Toward Life and consequently could not be included in these analyses).

Inspection of the squared multiple correlations and their differences for the Student Body variables shows that the criterion scaling technique did not increase the predictability of Achievement and Attitude Toward Life from the Student Body Variables but did increase the predictability of Educational Plans somewhat and Expectations and Study Habits considerably.

Inspection of the squared multiple correlations and their differences for the School variables shows that the criterion scaling technique did not increase the predictability of Achievement, Expectations and Educational Plans, increased the predictability of Study Habits somewhat but decreased the predictability of Attitude Toward Life.

The criterion scaling technique increased the predictability of Expectations and Study Habits considerably from the School and Student Body variables combined, increased Educational Plans somewhat, did not change Achievement and reduced the predictability of Attitude Toward Life slightly.

TABLE XII.5.3 - Correlations With Achievement, Sex and Racial-Ethnic Differences for Indices Comprised of Criterion Scaled Variables and for Indices Comprised of Judgmentally Scaled Variables

INDEX TITLE	ACHIEVEMENT*			SEX*			RACIAL-ETHNIC DIFFERENCES*		
	C	J	D	C	J	D	C	J	D
Expectations	.39	.35	.03	.20	.05	.04	.17	.12	.01
Socio-Economic Status	.54	.51	.03	.26	.05	.06	.41	.37	.03
Social Confidence	.30	.27	.02	.24	.07	.05	.25	.14	.04
Attitude Toward Life	.47	.54	.07	.21	.12	.03	.30	.29	.01
Family Structure and Stability	.33	.30	.02	.34	.06	.11	.35	.33	.01
Educational Plans	.51	.49	.02	.16	-.01	.03	.16	.14	.01
Study Habits	.36	.29	.05	.36	.23	.08	.24	.12	.04

* "C" indicates the correlation is for indices comprised of criterion scaled variables; "J" indicates the correlation is for the indices comprised of judgmentally scaled variables; "D" indicates the absolute difference obtained by squaring the correlations and subtracting them.

TABLE XII.6.1 - School Index Intercorrelations for Indices Comprised of Criterion Scaled (C) and Judgmentally Scaled Variables (J)

		SES 1	FSS 2	REC 3	EXP 4	ATT 5	ED PLN 6	STDY 7	ACH 8
1. Socio-Economic Status (SES)	(C)	1.00	.67	.68	.47	.60	.69	.57	.82
	(J)	1.00	.62	.68	.31	.64	.64	.32	.82
2. Family Structure and Stability (FSS)	(C)	.67	1.00	.70	.66	.75	.56	.82	.66
	(J)	.62	1.00	.81	.38	.72	.40	.40	.76
3. Racial-Ethnic Composition (REC)	(C)	.68	.70	1.00	.28	.60	.28	.42	.84
	(J)	.68	.81	1.00	.19	.69	.24	.21	.83
4. Expectations (EXP)	(C)	.47	.66	.28	1.00	.72	.69	.82	.31
	(J)	.31	.38	.19	1.00	.50	.63	.72	.17
5. Attitude Toward Life (ATT)	(C)	.60	.75	.60	.72	1.00	.62	.79	.64
	(J)	.64	.72	.69	.50	1.00	.59	.54	.76
6. Education Plans and Desires (ED PLN)	(C)	.69	.56	.28	.69	.62	1.00	.68	.50
	(J)	.64	.40	.24	.63	.59	1.00	.60	.46
7. Study Habits (STDY)	(C)	.57	.82	.42	.82	.79	.68	1.00	.46
	(J)	.32	.40	.21	.72	.54	.60	1.00	.25
8. Achievement (ACH)	(C)	.82	.66	.84	.31	.64	.50	.46	1.00
	(J)	.82	.76	.83	.17	.76	.46	.25	1.00
9. School Variables (full set of 31)*	(C)	.82	.65	.92	.42	.59	.56	.45	.87
	(J)	.83	.77	.91	.42	.69	.56	.40	.87

*This row contains the multiple correlation of the full set of school variables with each of the other variables.

TABLE XII.6.2 - Comparison of the Squared Multiple Correlations, Unique Associations and Commonality Coefficients for Student Social Background and School Variables for Indices Comprised of Criterion Scaled (C) and Judgmentally Scaled (J) Variables

VARIABLE SET		EXPECTATIONS	ATTITUDE TOWARD LIFE	EDUCATIONAL PLANS	STUDY HABITS	ACHIEVEMENT
1. Student Body	(C)	.5214	.5847	.6066	.7373	.8207
	(J)	.2155	.5896	.5522	.2350	.8171
Difference		+.3059	-.0049	+.0544	+.5023	+.0026
2. School	(C)	.1773	.3500	.3179	.2023	.7601
	(J)	.1736	.4808	.3152	.1605	.7596
Difference		+.0037	-.1308	+.0027	+.0418	+.0005
3. Student Body and School	(C)	.6309	.6386	.6679	.7773	.8662
	(J)	.4423	.6685	.6089	.4026	.8686
Difference		+.1886	-.0299	+.0590	+.3747	-.0026
4. $U(S)=(3)-(1)$	(C)	.1095	.0539	.0613	.0400	.0455
	(J)	.2268	.0789	.0567	.1676	.0515
Difference		-.1173	-.0250	+.0046	-.1276	-.0060
5. $U(B)=(3)-(2)$	(C)	.4536	.2886	.3500	.5750	.1061
	(J)	.2687	.1877	.2937	.2421	.1090
Difference		+.1849	+.1009	+.0563	+.3329	-.0029
6. $C(BS)=R^2(BS)$	(C)	.0678	.2961	.2566	.1623	.7146
$-U(B)-U(S)$	(J)	-.0532	.4019	.2585	-.0071	.7081
Difference		+.1210	-.1058	-.0019	+.1694	+.0065

The most important observations pertain to the influence that the criterion scaling technique had on the unique associations or influence attributed to the School variables, Student Body variables and their commonality coefficient.

Row 4 shows the unique associations of the schools for the criterion scaling and judgmental scaling techniques. The row of differences shows that the unique association values were left unchanged by criterion scaling for Educational Plans and Achievement, slightly decreased for Attitude Toward Life and considerably decreased for Expectations and Study Habits.

The differences for row 5 show the extent to which the criterion scaling technique increased the variance or unique association attributed to the Student Body variables. Achievement was left unchanged while of the other outcomes Educational Plans and Attitude Toward Life were increased considerably.

The differences for row 6 show the extent to which the two scaling techniques altered the commonality coefficients for the School and Student Body variables. The commonality coefficient was left unchanged for Educational Plans and Achievement, was decreased for Expectations and Study Habits and was increased for Attitude Toward Life. The negative coefficient for Expectations using the judgmental (J) scaling technique indicates possible supressor variable influences operative as suggested in Appendix II. This might have resulted in considerable difficulties in interpretation.

7.0 Summary and Conclusions

This side study attempted to determine the extent to which two different kinds of coding or scaling techniques would yield different results at different stages in the analysis. The two scaling techniques were criterion scaling and judgmental scaling. Criterion scaling assigned the mean score obtained on an Achievement composite by those students choosing a particular questionnaire item alternative. Judgmental scaling assigned code values on an a priori basis except for those students who indicated they didn't know or who failed to respond to the item. For these latter students the results of the criterion scale analyses were used to determine their code value. In a sense, therefore, these latter codes might be termed quasi-criterion scale values.

The results at different stages in the analysis showed that:

1. When there is a natural scale value as in number of years of schooling completed, the means of the judgmentally scaled variables were more meaningful than the criterion scaled variables. When there was not a natural scale as in many of the attitudinal items, the means obtained by the two techniques were about equally interpretable.

2. The variances were almost always greater for the criterion scaled than for the judgmentally scaled variables.

3. The criterion scaling technique resulted in slightly larger zero order correlations with Verbal achievement than did the judgmental scaling technique. These differences were not great enough, however, to assert the superiority of one technique over the other.

4. A slightly greater percent (2-3%) of variance among the intercorrelations was accounted for by the principal components of the criterion scaled variables than by the principal components of the judgmentally scaled variable. This initial advantage tended to decrease with the later components. Using the criterion of a latent root of one or greater, ten components were retained from the criterion scaled variables and thirteen from the judgmentally scaled.

5. The varimax factors obtained by rotating components that had a latent root of one or greater were more readily interpretable for the judgmentally scaled than for the criterion scaled variables. However, the same factors could be obtained from two different scaling techniques and the weights used to obtain the indices were usually highly similar.

6. The variances and intercorrelations of indices comprised of criterion scaled variables were larger than for indices comprised of judgmentally scaled variables.

7. The index correlations with the Achievement composite, Sex and Racial-Ethnic Differences were almost always negligibly to moderately larger for indices of criterion scaled variables than for indices of judgmentally scaled variables.

8. The school index intercorrelations were larger for indices of criterion scaled variables than for indices of judgmentally scaled variables.

9. The squared multiple correlations of the three student Body Social Background variables of Socio-Economic Status, Family Structure and Racial-Ethnic Composition with the school outcomes were substantially larger for two of the four attitudinal outcomes, but were not different for the other two and not for Achievement using indices of criterion scaled rather than judgmentally scaled variables.

10. The squared multiple correlations of the comprehensive set of 31 School variables with the school outcomes were different for two of the four attitudinal outcomes but not for the other two and not for Achievement using indices of criterion scaled rather than judgmentally scaled variables.

11. The squared multiple correlations of the combined School and Student Body Social Background variables (a set of 34 variables) were slightly to substantially larger for three of the four attitudinal outcomes, slightly less for the fourth attitudinal outcome and unchanged for Achievement using indices of criterion scaled rather than judgmentally scaled variables.

12. The unique association (or portion) of the School variables was reduced for three of the four attitudinal outcomes, but was left unchanged for the fourth attitudinal outcome and for Achievement using indices of criterion scaled rather than judgmentally scaled variables.

13. The unique association (or portion) of the Student Body Social Background variables was increased moderately to substantially for all of the attitudinal outcomes, but not for Achievement using indices of criterion scaled rather than judgmentally scaled variables.

14. The commonality coefficient was increased for two of the attitudinal outcomes, decreased for another and, unchanged for a fourth attitudinal outcome and for Achievement using indices of criterion scaled rather than judgmentally scaled variables.

The criterion scaling technique when compared to the judgmental scaling technique tended to increase the correlation of all the student questionnaire items with Achievement and consequently, their correlation with one another.

These analyses suggest that the inferences about school influences would have been altered somewhat for Expectations and Study Habits, but would have been left unchanged for Attitude Toward Life, Educational Plans and Achievement using the judgmental rather than the criterion scaling technique. The influence attributed to the Student Body variables would have been the same for Achievement but less for the other outcome measures using the judgmental rather than the criterion scaling technique. The cooperative role of the School and Student Body variables would remain the same for Achievement and Educational Plans using the Judgmental scaling technique, would have been increased for Attitude Toward Life and decreased for Expectations and Study Habits. However, the major conclusions (or hypotheses) about the involvement of the student's social background in school outcomes would have been altered slightly if at all if these analyses had used the judgmental rather than the criterion scaling technique but, the degree or extent of involvement would be different for Expectations and Study Habits. It does not seem likely, however, that the nature of the contribution of specific variables to these outcomes would have been better understood using the judgmental rather than the criterion scaling technique.

7.1 Ninth Grade Student Questionnaire Judgmental Item Codes or Scale Values

Ninth Grade Student Questionnaire Judgmental Item Codes or Scale Values

QUESTIONNAIRE NUMBER	QUESTIONNAIRE ITEM ALTERNATIVE											NON-RESPONSE CODE
	A	B	C	D	E	F	G	H	I	J	K	
3	1	2										0
4	0	1	1	0	0	0	0					0
5	2	2	3	1	1	1	1					1
6	1	2	3	3	2	3	2	3				1
7+	1	2	1	1	1	2	1					1
9	2	3	4	5	6	7	8	9	10	12		12
10	0	1	2	3	4	5	6	7	8	10		10
11	0	1	2	3	4	5	6	7	8	10		10
12	0	0	1	2	3	4	5	6	7	9		9
13	1	2										1
14	1	1	1	2								1
15	1	2	3	4	5	6	7	8	9	11		2
16	2	1	1	1	1	1	1	1				1
17	2	1	1	1	1	1	1	1				1
18	9	8	10	5	11	6	3	4	12	7	2	1
19	4	8	10	12	14	14	16	18	4			4
20	4	8	10	12	14	14	16	18	4			4
22	2	1	1	1	1	1						1
23	1	2	3									1
24	3	3	2	1	2							1
25	3	3	2	1	2							1
26	4	3	2	1								1

Continued

QUESTIONNAIRE NUMBER	A	B	C	D	E	F	G	H	I	J	K	NON-RESPONSE CODE
27	10	12	14	14	16	18	13	13				10
28	10	12	14	14	16	18	13	13				10
29	0	.5	.5	.9	.9	0						0
30	0	1	2	2	1							0
31	2	1										1
32	2	1										1
33	2	1										1
34	2	1										1
35	2	1										1
36	2	1										1
37	2	1										1
38	2	1										1
39	2	1										1
41	0	1.5	3.5	5.5	7.5							0
42	5.5	17.5	42.5	175	325							5.5
SM#1	Sum the values for items 31, 32, 33, 34, 37, 38											
SM#2	Sum the values for items 35, 36, 39, 41, 42											
44	2	1										1
46	0	1	2	3	5							0
47	0	6	12	24	36	48	60					6
48	10	12	14	14	16	18						10
53	4	3	2	1								1
54	0	3	7	12	18	24						0

Continued

QUESTIONNAIRE NUMBER				QUESTIONNAIRE ITEM ALTERNATIVE								NON-RESPONSE CODE
	A	B	C	D	E	F	G	H	I	J	K	
55	1	1	3	3	2	2	1					1
56	1	2	3	4	5							1
57	4	3	2	1	1							1
58	0	.5	1	1.5	2	3	4.5					0
60	4	3	2	1	1							1
65	2	1	1									2
67	2	1	1									1
68	2	1	1									1
69	1	2	2	1								1
70	1	2	2	1								2
SM#3	Sum the values for 65, 67, 68, 69, 70											
86	0	3	8	13	18	23						23
87	3	3	2	1								1
88	5	4	3	2	1							1
91	4	3	2	1	4							1
92	2	1	3									1
93	1	2	3									1
94	1	2	3									1
95	1	2	3									1
96	1	2	3									1
97	1	2	3									1
98	1	2	3									1
99	1	2	3									1

Continued

QUESTIONNAIRE NUMBER	QUESTIONNAIRE ITEM ALTERNATIVE											NON-RESPONSE CODE
	A	B	C	D	E	F	G	H	I	J	K	
100	1	2	3									1
101	3	2	1									1
102	3	2	1									1
103	1	2	3									1
106	9	8	10	5	11	6	3	4	12	7	2	1

7.2 Ninth Grade Student Questionnaire Means, Sigmas and Intercorrelations of Judgmentally Scaled Variables for a Sample of 12,000*

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*The List of Variable titles are given in Appendix IV.

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EMP-FACTOR ANALYSIS NINTH GRADE

ALL VARIABLES

THE NUMBER OF OBSERVATIONS IS      12000.

VARIABLE        SUMS         SUMS OF SQUARES          MEAN            SIGMA(N)         SIGMA(N-1)
     1        17883.6619         29650.9885           1.4903             0.4999            0.4999
     2         9573.2046          9573.2069           0.7978             0.4017            0.4017
     3        24906.1594         53021.5518           2.0755             0.3327            0.3327
     4        26553.5652         65806.7705           2.2128             0.7664            0.7665
     5        20988.3464         38965.0415           1.7490             0.4336            0.4336
     6        68665.8203        451299.7344           5.7222             2.2057            2.2058
     7        42608.4888        232465.4141           3.5507             2.6009            2.6010
     8        20292.7571         83056.7354           1.6911             2.0154            2.0154
     9         4788.7611         16945.1094           0.3991             1.1193            1.1194
    10        22167.9541         42503.8647           1.8473             0.3597            0.3597
    11        21027.6438         39082.9341           1.7523             0.4317            0.4317
    12        75754.8311        524110.9375           6.3129             1.9553            1.9554
    13        21417.9802         40253.9443           1.7848             0.4109            0.4110
    14        22990.0127         44970.0396           1.9158             0.2776            0.2776
    15        79419.7158        629188.9297           6.6183             2.9378            2.9379
    16       120641.7324       1415693.0625          10.0535             4.1112            4.1114
    17       126217.4990       1476848.7500          10.5181             3.5270            3.5272
    18        21436.5386         40309.6230           1.7864             0.4099            0.4099
    19        26932.5637         69675.1494           2.2444             0.8770            0.8770
    20        32859.8320         93105.0664           2.7383             0.5103            0.5103
    21        32705.5403         92280.7852           2.7255             0.5118            0.5118
    22        39568.4829        142327.6816           3.2974             0.9940            0.9940
    23       176757.2246       2645195.2500          14.7298             1.8620            1.8620
    24       178702.4258       2701305.7500          14.8919             1.8279            1.8279
    25         4103.5071          2905.1276           0.3420             0.3538            0.3538
    26        17937.4946         31395.9575           1.4948             0.6180            0.6180
    27       134937.9980       1547783.9688          11.2448             1.5924            1.5925
    28      1502235.4844     0.35076506E 09         125.1863           116.4423          116.4472
    29        18952.1792         32856.5415           1.5793             0.4937            0.4937
    30        19928.0073         73647.3994           1.6607             1.8383            1.8384
    31       250816.7539      11909991.3750          20.9014            23.5718           23.5728
    32       179167.2617       2730508.4688          14.9306             2.1493            2.1494
    33        37057.0791        125536.9063           3.0881             0.9618            0.9619
    34        81057.5879       1211816.9844           6.7548             7.4403            7.4406
    35        21695.2346         46155.9976           1.8079             0.7601            0.7601
    36        48042.2456        206070.0957           4.0035             1.0697            1.0698
    37        38623.7144        134169.3125           3.2166             0.9062            0.9062
    38        19643.4758         46028.6855           1.6370             1.0752            1.0753
    39        44688.0239        171778.6621           3.7240             0.6684            0.6684
    40        69450.9990        426880.9922           5.7876             1.4413            1.4413
    41        48038.0952        719164.4375           4.0032             6.6261            6.6264
    42        29082.1235         74550.8242           2.4235             0.5824            0.5824
    43        41931.0708        154790.3203           3.4943             0.8303            0.8303
    44        39013.8291        134728.7617           3.2512             0.8108            0.8108
    45        23724.8242         52774.0073           1.9771             0.6993            0.6993
    46        31921.1296         90150.8398           2.6601             0.6607            0.6607
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EMP-FACTOR ANALYSIS NINTH GRADE

ALL VARIABLES

THE NUMBER OF OBSERVATIONS IS      12000.

VARIABLE       SUMS        SUMS OF SQUARES          MEAN          SIGMA(N)         SIGMA(N-1)
    47      27494.7927        70831.5518           2.2912          0.8080            0.8080
    48      22961.5896        52338.6982           1.9135          0.8368            0.8368
    49      26806.7539        67182.0303           2.2339          0.7799            0.7799
    50      23918.4182        54878.6548           1.9932          0.7748            0.7749
    51      27111.2700        69411.2666           2.2593          0.8246            0.8246
    52      23897.8035        57175.1377           1.9915          0.8936            0.8937
    53      25849.6318        63921.0996           2.1541          0.8285            0.8286
    54      29903.2344        80258.0801           2.4919          0.6917            0.6917
    55      29778.8589        79528.5576           2.4816          0.6850            0.6850
    56      30760.3496        84260.8809           2.5634          0.6715            0.6715
    57      89874.1328       878147.2109           7.4895          4.1335            4.1337
    58     435036.9961     16781644.7500          36.2531          9.1752            9.1756
    59     596978.9922     32836552.2500          49.7482         16.1707           16.1714
    60     607704.9922     33621054.5000          50.6421         15.3992           15.3998
    61     684424.9922     43201482.5000          57.0354         18.6302           18.6310
    62     539247.9922     27057599.2500          44.9373         15.3439           15.3446
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EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX      ALL VARIABLES

                   1                  2                  3                  4                  5                  6                  7

   1            1.000000           0.112486           0.006383           0.040994           0.004031           0.008487           0.011168
   2            0.112486           1.000000           0.008474           0.073049           0.153011          -0.102772          -0.167165
   3            0.006383           0.008474           1.000000           0.045426           0.059525          -0.023176          -0.014315
   4            0.040994           0.073049           0.045426           1.000000           0.079983          -0.115048          -0.155219
   5            0.004030           0.153011           0.059525           0.079983           1.000000          -0.249167          -0.297398
   6            0.008487          -0.102772          -0.023176          -0.115048          -0.249167           1.000000           0.659064
   7            0.011168          -0.167165          -0.014315          -0.155219          -0.297398           0.659064           1.000000
   8            0.005531          -0.135697          -0.040019          -0.137455          -0.206074           0.253832           0.631369
   9            0.006829          -0.207993          -0.072861          -0.100935          -0.160610           0.167042           0.403758
  10            0.022435           0.080038           0.053626          -0.027726           0.133726          -0.053796          -0.046065
  11           -0.029965           0.018310           0.022328          -0.060599           0.097518           0.008668           0.012442
  12            0.010629           0.101249           0.026095           0.082363           0.160832           0.098353           0.012181
  13           -0.026191           0.151654           0.000314           0.025236           0.256426           0.002874          -0.158416
  14            0.034325           0.154493           0.019914           0.031329           0.169064          -0.024974          -0.110572
  15           -0.014616           0.140091           0.062650           0.169922           0.273262          -0.142498          -0.201042
  16           -0.020644           0.187954           0.073823           0.171609           0.243468          -0.137357          -0.226934
  17            0.014384           0.196866           0.054027           0.146391           0.221172          -0.143364          -0.239262
  18           -0.033087           0.139910           0.029912           0.041856           0.223635           0.000679          -0.145220
  19           -0.000069           0.013525           0.022692          -0.017156           0.094614           0.099069           0.055850
  20           -0.043623           0.164331           0.055877           0.050470           0.072212          -0.115824          -0.119389
  21           -0.035320           0.147250           0.063714           0.061201           0.100819          -0.095407          -0.129595
  22            0.035528           0.081693           0.031639           0.053909           0.039006          -0.116327          -0.144783
  23           -0.086321           0.209647           0.053145           0.139450           0.104951          -0.137177          -0.210724
  24           -0.083981           0.216560           0.049983           0.123259           0.063286          -0.140742          -0.187345
  25            0.004884           0.123713          -0.001010           0.038198          -0.037127           0.002669          -0.064904
  26            0.110988           0.165557           0.043531           0.060976           0.095154          -0.101788          -0.122350
  27            0.031435           0.212562           0.047970           0.180505           0.339336          -0.181031          -0.251487
  28           -0.004136           0.127480           0.050468           0.144948           0.182702          -0.084674          -0.140413
  29            0.012114           0.109248           0.024214           0.292312           0.068670          -0.093992          -0.140387
  30           -0.021905          -0.135068           0.221892           0.082032          -0.029961           0.042770           0.096752
  31           -0.012831          -0.025265           0.034011           0.077392           0.006924          -0.005795          -0.001680
  32           -0.061781           0.244811           0.041162           0.140396           0.077154          -0.134430          -0.193904
  33           -0.043470           0.229092           0.035587           0.125792           0.002453          -0.123340          -0.176194
  34            0.076194           0.047192           0.045380           0.010190          -0.006791           0.005424          -0.008652
  35           -0.005952           0.074269          -0.007283           0.061587           0.150125          -0.074900          -0.098152
  36            0.130524           0.175916           0.038901           0.053089           0.072317          -0.091366          -0.106631
  37            0.015924           0.168433           0.046691           0.009444           0.005029          -0.065447          -0.084315
  38            0.175983           0.041245           0.005110           0.000357          -0.031243          -0.020842          -0.024785
  39            0.074021           0.144680           0.009555          -0.025965           0.052593          -0.052624          -0.095300
  40           -0.027713           0.047416           0.033421           0.037982           0.014827          -0.024623          -0.014123
  41           -0.170471          -0.090797           0.009124          -0.018547           0.025959           0.044654           0.056359
  42           -0.000912           0.069744           0.004589           0.022606          -0.026084          -0.049170          -0.066294
  43           -0.037286           0.174033           0.029299           0.057783           0.026428          -0.087863          -0.118814
  44            0.012472           0.068598           0.016888           0.003017          -0.065995          -0.023593          -0.025068
  45            0.014748           0.101031           0.016554           0.062892           0.098825          -0.071246          -0.078896
  46            0.042257           0.196544           0.043926           0.086136           0.256680          -0.148723          -0.170210
  47            0.047229           0.147280           0.007752           0.048539           0.131982          -0.086155          -0.124342
  48            0.016331           0.038433           0.000545           0.028633           0.048759          -0.007162          -0.009838
  49            0.067549           0.117740           0.033447           0.033869           0.088571          -0.070959          -0.080824
  50            0.022719           0.074751           0.031933           0.023740           0.128867          -0.052893          -0.071748
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EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX      ALL VARIABLES
                         1            2            3            4            5            6            7

   51            -0.011175     0.093654     0.021205     0.028017     0.109039    -0.063939    -0.084542
   52            -0.049911     0.074859     0.014203     0.029351    -0.014015    -0.031345    -0.044244
   53             0.049681     0.121768     0.021676     0.036425     0.061698    -0.048537    -0.066749
   54             0.026634     0.049849     0.006071    -0.003880    -0.000720    -0.005860    -0.022899
   55            -0.066180     0.050359     0.010456     0.011209    -0.013074    -0.024699    -0.045749
   56             0.053683     0.185875     0.028938     0.074025     0.166398    -0.110435    -0.144962
   57            -0.013212     0.134068     0.040080     0.104008     0.045998    -0.100730    -0.131472
   58             0.085117     0.262024     0.056103     0.147486     0.349427    -0.157033    -0.205459
   59            -0.043168     0.303879     0.066251     0.154293     0.443814    -0.243293    -0.300487
   60             0.029447     0.322197     0.072107     0.186309     0.429994    -0.238245    -0.295874
   61             0.154037     0.319905     0.051168     0.147535     0.366016    -0.197418    -0.244072
   62            -0.025553     0.275028     0.055881     0.106938     0.369689    -0.176381    -0.224452
```

EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX ALL VARIABLES

	8	9	10	11	12	13	14
1	0.005531	0.006829	0.022436	-0.029965	0.010629	-0.026191	0.03432
2	-0.135697	-0.207993	0.080038	0.018310	0.101249	0.151654	0.15449
3	-0.040019	-0.072861	0.053627	0.022328	0.026096	0.000314	0.01991
4	-0.137455	-0.100935	-0.027726	-0.060599	0.082363	0.025237	0.03132
5	-0.206074	-0.160610	0.133726	0.097518	0.160832	0.256426	0.16906
6	0.253832	0.167042	-0.053795	0.008668	0.098353	0.002874	-0.02497
7	0.631369	0.403758	-0.046065	0.012442	0.012181	-0.158416	-0.11057
8	1.000000	0.578767	-0.059972	-0.010593	-0.036490	-0.147020	-0.13455
9	0.578767	1.000000	-0.075490	-0.027695	-0.106346	-0.166522	-0.15215
10	-0.059972	-0.075490	1.000000	0.319260	0.021825	0.036594	0.02612
11	-0.010593	-0.027695	0.319260	1.000000	-0.044373	0.034579	0.03590
12	-0.036490	-0.106346	0.021825	-0.044373	1.000000	0.151120	0.07261
13	-0.147020	-0.166522	0.036594	0.034579	0.151120	1.000000	0.28125
14	-0.134555	-0.152150	0.026120	0.035902	0.072611	0.281256	1.00000
15	-0.160367	-0.166539	0.037518	-0.054074	0.243193	0.189300	0.08361
16	-0.215892	-0.215964	0.075851	-0.047627	0.263747	0.182955	0.08297
17	-0.217847	-0.216148	0.104672	-0.022416	0.244965	0.126069	0.11167
18	-0.175468	-0.183145	0.045339	0.027592	0.140892	0.598375	0.14924
19	-0.011599	0.012284	-0.000168	0.023629	0.056723	0.136311	0.00836
20	-0.115173	-0.148804	0.080219	-0.000972	0.096180	0.082510	0.10437
21	-0.125925	-0.155505	0.074494	0.000926	0.109943	0.167089	0.08771
22	-0.132709	-0.148997	0.053856	-0.003456	0.061336	0.081752	0.10388
23	-0.196867	-0.216932	0.040876	-0.070786	0.196258	0.192530	0.10393
24	-0.173428	-0.207610	0.038853	-0.064355	0.168134	0.098635	0.12970
25	-0.098316	-0.105951	0.053321	-0.049861	0.128324	0.096658	0.07680
26	-0.120421	-0.138149	0.107092	0.007132	0.120491	0.078683	0.10348
27	-0.209737	-0.255184	0.065513	0.004197	0.263049	0.222017	0.18119
28	-0.093879	-0.130379	0.001744	-0.089947	0.290083	0.115791	0.06526
29	-0.126700	-0.135798	-0.064702	-0.079673	0.121130	0.035273	0.04987
30	0.018886	0.072313	-0.062113	-0.058747	-0.042457	-0.175399	-0.09677
31	-0.029384	0.000587	-0.001888	-0.023573	0.012458	-0.041158	-0.00428
32	-0.186401	-0.223084	0.044075	-0.072234	0.172925	0.098782	0.10223
33	-0.154958	-0.205147	0.031465	-0.085387	0.150312	0.078356	0.08049
34	-0.041846	-0.043011	0.003293	-0.072136	0.066063	0.003635	0.01086
35	-0.085006	-0.083290	0.008609	-0.027778	0.080029	0.085937	0.05474
36	-0.108407	-0.151523	0.075605	-0.009614	0.062846	0.070490	0.11054
37	-0.088729	-0.124627	0.064987	-0.018151	0.072904	0.070105	0.06988
38	-0.012271	-0.027474	-0.007812	-0.043670	0.060022	0.019699	0.03859
39	-0.105755	-0.168474	0.082989	0.077321	0.016771	0.124274	0.13103
40	-0.001455	-0.029863	-0.013664	-0.082741	0.093097	0.027060	0.02608
41	0.047267	0.053639	-0.046914	-0.042325	0.046591	-0.023669	-0.03596
42	-0.051713	-0.076050	0.007845	-0.049293	0.105494	0.033323	0.04547
43	-0.087047	-0.112687	0.040768	-0.074114	0.119661	0.084563	0.05804
44	-0.032271	-0.053038	0.012794	-0.051981	0.026973	0.003145	-0.00361
45	-0.046207	-0.056428	0.020008	-0.039258	0.092053	0.040427	0.01730
46	-0.159360	-0.167248	0.092927	0.002547	0.101027	0.113743	0.10801
47	-0.107294	-0.110139	0.064224	0.009635	0.074297	0.104590	0.07552
48	-0.018070	-0.017363	0.015606	-0.026210	0.041335	0.007042	0.00220
49	-0.088753	-0.074033	0.040844	-0.011356	0.068297	0.065019	0.04872
50	-0.047880	-0.033503	0.060833	0.011362	0.049618	0.053679	0.03012

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EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX      ALL VARIABLES

                      8              9             10             11             12             13             14

     51          -0.076217      -0.064186       0.050804       0.006486       0.042648       0.076798       0.058578
     52          -0.051424      -0.053715       0.026889      -0.006808       0.031765       0.034196       0.034839
     53          -0.076694      -0.075473       0.036608      -0.001532       0.046912       0.047319       0.036108
     54          -0.038001      -0.055165       0.028574       0.011306       0.019669       0.042612       0.041052
     55          -0.046229      -0.054278       0.011593      -0.025326       0.040333       0.029198       0.068792
     56          -0.125905      -0.137607       0.082268       0.020400       0.094993       0.100098       0.094371
     57          -0.118821      -0.128907       0.029344      -0.089766       0.121582       0.048486       0.055818
     58          -0.178103      -0.209115       0.064771      -0.035996       0.174529       0.183750       0.170281
     59          -0.256336      -0.233452       0.129181      -0.026776       0.199438       0.218059       0.158983
     60          -0.244384      -0.224690       0.108306      -0.053838       0.193642       0.201112       0.154516
     61          -0.214139      -0.211706       0.113228      -0.027240       0.148805       0.181929       0.164267
     62          -0.191879      -0.199212       0.110653      -0.020170       0.151254       0.204585       0.154368
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EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX ALL VARIABLES

	15	16	17	18	19	20	21
1	-0.014616	-0.020644	0.014384	-0.033087	-0.000069	-0.043623	-0.035320
2	0.140091	0.187954	0.196866	0.139910	0.013525	0.164330	0.147250
3	0.062650	0.073823	0.054027	0.029912	0.022692	0.055877	0.063714
4	0.169922	0.171609	0.146391	0.041857	-0.017166	0.050470	0.061201
5	0.273262	0.243468	0.221172	0.223635	0.094614	0.072212	0.100819
6	-0.142498	-0.137357	-0.143364	0.000679	0.099069	-0.115824	-0.095407
7	-0.201042	-0.226934	-0.239262	-0.145220	0.055850	-0.119389	-0.129595
8	-0.160367	-0.215892	-0.217847	-0.175468	-0.011599	-0.115173	-0.125925
9	-0.166539	-0.215964	-0.216148	-0.183145	0.012284	-0.148804	-0.155505
10	0.037518	0.075851	0.104672	0.045339	-0.000168	0.080219	0.074494
11	-0.054074	-0.047627	-0.022416	0.027592	0.023629	-0.000972	0.000926
12	0.243193	0.263747	0.244965	0.140892	0.056723	0.096180	0.109942
13	0.189300	0.182955	0.126069	0.598375	0.136311	0.082510	0.167089
14	0.083615	0.082973	0.111678	0.149243	0.008363	0.104371	0.087716
15	1.000000	0.442190	0.335298	0.221888	0.052308	0.147681	0.191637
16	0.442190	1.000000	0.587518	0.209510	0.036539	0.190948	0.229687
17	0.335298	0.587518	1.000000	0.130325	-0.062583	0.191882	0.181318
18	0.221888	0.209510	0.130325	1.000000	0.213816	0.094259	0.170475
19	0.052308	0.036539	-0.062583	0.213816	1.000000	-0.045447	-0.004615
20	0.147682	0.190948	0.191882	0.094260	-0.045447	1.000000	0.714245
21	0.191637	0.229687	0.181318	0.170475	-0.004615	0.714245	1.000000
22	0.109146	0.149301	0.149474	0.089870	0.003175	0.218317	0.235992
23	0.298044	0.363103	0.316210	0.195040	-0.003160	0.302924	0.356182
24	0.246613	0.308326	0.315637	0.098884	-0.043133	0.343272	0.295829
25	0.144345	0.201351	0.204494	0.094120	0.004421	0.142016	0.138330
26	0.157720	0.229068	0.238080	0.101336	-0.004416	0.193148	0.186646
27	0.257748	0.277122	0.277995	0.251954	0.001248	0.160009	0.185264
28	0.293683	0.340033	0.306067	0.102733	0.017331	0.135097	0.131870
29	0.165678	0.196785	0.180997	0.060090	0.022235	0.035564	0.047731
30	0.006651	-0.006730	-0.041433	-0.111301	-0.018854	-0.037056	-0.035417
31	0.038603	0.027215	0.017942	-0.019794	-0.028330	0.015623	0.012334
32	0.252377	0.312567	0.279225	0.113657	-0.019723	0.296054	0.258987
33	0.248810	0.304435	0.271498	0.088439	-0.043623	0.292032	0.269706
34	0.043338	0.089466	0.075422	-0.003083	-0.001965	0.073763	0.063769
35	0.111506	0.134859	0.118614	0.087969	0.023679	0.088588	0.098261
36	0.109927	0.134592	0.129248	0.077155	-0.005557	0.207586	0.188409
37	0.107621	0.139876	0.123176	0.074789	-0.014342	0.480900	0.422253
38	0.030856	0.043815	0.047978	0.016511	-0.009094	0.084255	0.065300
39	0.051629	0.049569	0.055541	0.114738	0.027377	0.099841	0.113387
40	0.079476	0.120643	0.118106	0.017509	-0.036593	0.079786	0.078570
41	0.000806	0.001949	-0.012070	-0.014391	-0.027460	-0.018104	-0.013842
42	0.117646	0.138295	0.129072	0.052586	-0.016402	0.175625	0.154977
43	0.180474	0.208797	0.207172	0.081455	0.007664	0.253444	0.237455
44	0.045927	0.031485	0.028851	0.002189	-0.022919	0.183219	0.160114
45	0.117494	0.135205	0.146779	0.039902	-0.008719	0.109928	0.104163
46	0.155142	0.182780	0.165979	0.130972	0.032394	0.164324	0.160856
47	0.134156	0.152797	0.135790	0.094108	0.034828	0.124578	0.114677
48	0.055114	0.057681	0.051949	0.002186	0.005118	0.020216	0.007055
49	0.094812	0.118696	0.123266	0.067494	0.013352	0.106744	0.105224
50	0.105562	0.077366	0.084971	0.061293	0.026367	0.024183	0.017377

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EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX      ALL VARIABLES
                    15             16             17             18             19             20             21

   51           0.088698       0.103740       0.089593       0.078417       0.020418       0.098689       0.086737
   52           0.066666       0.091652       0.090239       0.030034       0.013635       0.109964       0.086209
   53           0.087826       0.119546       0.108873       0.045525       0.021460       0.120550       0.106740
   54           0.033287       0.038554       0.047071       0.041988       0.007906       0.102570       0.104802
   55           0.044554       0.069492       0.076059       0.022455      -0.016071       0.139712       0.129600
   56           0.152321       0.179067       0.184606       0.113094       0.015163       0.176798       0.163324
   57           0.209138       0.219640       0.211064       0.060316      -0.033915       0.204908       0.202519
   58           0.233187       0.254585       0.249380       0.176464       0.040785       0.186242       0.190835
   59           0.327509       0.362393       0.349673       0.206289       0.053158       0.251259       0.246684
   60           0.343096       0.375377       0.354684       0.189936       0.045003       0.252860       0.249547
   61           0.269261       0.293634       0.289426       0.167262       0.045335       0.226201       0.216188
   62           0.273740       0.294692       0.281167       0.190822       0.045592       0.244845       0.236379
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EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX      ALL VARIABLES
                    22                 23                 24                 25                 26                 27                 28

   1          0.035528          -0.086321          -0.083981           0.004884           0.110988           0.031435          -0.004136
   2          0.081693           0.209647           0.216560           0.123713           0.165557           0.212562           0.127480
   3          0.031639           0.053146           0.049983          -0.001010           0.043531           0.047970           0.050468
   4          0.053909           0.139451           0.123259           0.038198           0.060976           0.180505           0.144948
   5          0.039006           0.104951           0.063286          -0.037127           0.095154           0.339336           0.182702
   6         -0.116327          -0.137177          -0.140742           0.002669          -0.101788          -0.181031          -0.084674
   7         -0.144783          -0.210724          -0.187345          -0.064904          -0.122350          -0.251487          -0.140413
   8         -0.132709          -0.196867          -0.173428          -0.098316          -0.120421          -0.209737          -0.093879
   9         -0.148997          -0.216932          -0.207610          -0.105951          -0.138149          -0.255184          -0.130379
  10          0.053856           0.040876           0.038853           0.053321           0.107092           0.065513           0.001744
  11         -0.003456          -0.070786          -0.064355          -0.049861           0.007132           0.004196          -0.089947
  12          0.061336           0.196258           0.168134           0.128324           0.120491           0.263049           0.290083
  13          0.081752           0.192530           0.098635           0.096658           0.078683           0.222017           0.115791
  14          0.103886           0.103939           0.129704           0.076807           0.103482           0.181192           0.065261
  15          0.109146           0.298044           0.246613           0.144345           0.157720           0.257748           0.293683
  16          0.149301           0.363103           0.308326           0.201351           0.229068           0.277122           0.340033
  17          0.149475           0.316210           0.315638           0.204494           0.238080           0.277995           0.306067
  18          0.089870           0.195040           0.098884           0.094120           0.101336           0.251954           0.102733
  19          0.003175          -0.003160          -0.043133           0.004421          -0.004416           0.001248           0.017331
  20          0.218317           0.302924           0.343272           0.142016           0.193148           0.160009           0.135097
  21          0.235992           0.356183           0.295829           0.138330           0.186647           0.185264           0.131870
  22          1.000000           0.240594           0.224869           0.183713           0.260021           0.112400           0.124912
  23          0.240594           1.000000           0.810312           0.219000           0.248270           0.233292           0.273999
  24          0.224870           0.810312           1.000000           0.228171           0.256905           0.206820           0.243031
  25          0.183713           0.219000           0.228171           1.000000           0.202153           0.100411           0.143840
  26          0.260021           0.248270           0.256905           0.202153           1.000000           0.156675           0.162111
  27          0.112400           0.233292           0.206820           0.100411           0.156675           1.000000           0.249221
  28          0.124912           0.273999           0.243031           0.143840           0.162111           0.249221           1.000000
  29          0.059149           0.142102           0.127535           0.084374           0.087439           0.207281           0.176298
  30         -0.058728          -0.058647          -0.057178          -0.130906          -0.078269          -0.044908          -0.010792
  31         -0.014494           0.008534           0.014096          -0.039858          -0.011178           0.032897           0.015921
  32          0.190104           0.603194           0.626953           0.197993           0.220653           0.203100           0.256391
  33          0.212671           0.550616           0.565796           0.223561           0.222397           0.170392           0.253702
  34          0.105301           0.117004           0.114509           0.122128           0.135251          -0.001534           0.166561
  35          0.076971           0.113030           0.111480           0.079605           0.091023           0.133349           0.062178
  36          0.188315           0.259499           0.266462           0.145818           0.223288           0.128369           0.122749
  37          0.184894           0.290063           0.318949           0.150854           0.190802           0.071809           0.124070
  38          0.173916           0.111918           0.121114           0.095746           0.122363           0.029975           0.071200
  39          0.150109           0.127545           0.119113           0.109403           0.121610           0.116891           0.022668
  40          0.057607           0.120822           0.120813           0.127461           0.097381           0.328857           0.120772
  41         -0.056989          -0.025138          -0.027518          -0.027545          -0.040660           0.001968           0.019625
  42          0.130112           0.196726           0.198353           0.137989           0.137010           0.077707           0.110609
  43          0.124596           0.293824           0.299888           0.185679           0.170448           0.107503           0.189548
  44          0.050691           0.123406           0.139834           0.063632           0.053029           0.007642           0.090002
  45          0.031000           0.137821           0.145047           0.060093           0.082999           0.084783           0.120743
  46          0.075881           0.184916           0.188181           0.047585           0.140132           0.222283           0.120649
  47          0.099265           0.169650           0.169981           0.099432           0.160161           0.122960           0.118426
  48         -0.015067           0.036626           0.033372          -0.004954           0.013157           0.029161           0.051746
  49          0.082623           0.147605           0.148339           0.074268           0.122054           0.078739           0.075492
  50         -0.028379           0.038222           0.030393           0.009621           0.031317           0.055926           0.077817
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EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX       ALL VARIABLES
                      22           23           24           25           26           27           28

     51          0.094520     0.122733     0.126019     0.058859     0.102277     0.110517     0.068567
     52          0.093786     0.143475     0.154013     0.073377     0.099055     0.013165     0.080478
     53          0.070882     0.137662     0.151757     0.074001     0.109623     0.057645     0.071955
     54          0.118155     0.091363     0.096717     0.080656     0.104828     0.038308     0.012243
     55          0.083905     0.106913     0.119692     0.081396     0.110500     0.054808     0.072000
     56          0.126878     0.204895     0.219414     0.106681     0.195334     0.177450     0.107544
     57          0.140811     0.316650     0.331365     0.146837     0.177290     0.128007     0.186839
     58          0.059083     0.235730     0.229163     0.077630     0.152923     0.326496     0.211165
     59          0.090095     0.349173     0.340014     0.110914     0.224236     0.349331     0.283264
     60          0.090775     0.348027     0.338181     0.121078     0.216848     0.314817     0.295311
     61          0.080525     0.284816     0.283015     0.108767     0.215030     0.301385     0.227428
     62          0.070365     0.289090     0.289176     0.105265     0.163450     0.290209     0.210481
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EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX      ALL VARIABLES
                   29            30            31            32            33            34            35

  1          0.012114     -0.021905     -0.012831     -0.061781     -0.043470      0.076194     -0.005952
  2          0.109248     -0.135068     -0.025265      0.244811      0.229092      0.047192      0.074269
  3          0.024214      0.221892      0.034011      0.041162      0.035587      0.045380     -0.007283
  4          0.292312      0.082032      0.077392      0.140396      0.125792      0.010190      0.061587
  5          0.068670     -0.029961      0.006924      0.077154      0.002453     -0.005791      0.150125
  6         -0.093991      0.042770     -0.005795     -0.134430     -0.123340      0.005424     -0.074900
  7         -0.140387      0.096752     -0.001680     -0.193904     -0.176194     -0.008652     -0.098152
  8         -0.126700      0.018886     -0.029384     -0.186401     -0.154958     -0.041846     -0.085006
  9         -0.135798      0.072313      0.000587     -0.223084     -0.205147     -0.043011     -0.083290
 10         -0.064702     -0.062113     -0.001888      0.044075      0.031465      0.003293      0.008609
 11         -0.079673     -0.058747     -0.023573     -0.072234     -0.085387     -0.072136     -0.027778
 12          0.121130     -0.042457      0.012458      0.172925      0.150312      0.065063      0.080029
 13          0.035273     -0.175399     -0.041158      0.098782      0.078356      0.003635      0.085937
 14          0.049871     -0.096777     -0.004286      0.102230      0.080491      0.010865      0.054740
 15          0.165678      0.006651      0.038603      0.252377      0.248810      0.043338      0.111506
 16          0.196786     -0.005730      0.027215      0.312567      0.304435      0.089466      0.134859
 17          0.180997     -0.041433      0.017942      0.279226      0.271498      0.075422      0.118614
 18          0.060090     -0.111301     -0.019794      0.113657      0.088439     -0.003083      0.087969
 19          0.022235     -0.018854     -0.028330     -0.019723     -0.043623     -0.001965      0.023679
 20          0.035565     -0.037056      0.015623      0.296055      0.292032      0.073763      0.088588
 21          0.047731     -0.035417      0.012334      0.258988      0.269706      0.063769      0.098261
 22          0.059149     -0.058728     -0.014494      0.190104      0.212671      0.105301      0.076971
 23          0.142102     -0.058647      0.008534      0.603194      0.550616      0.117004      0.113030
 24          0.127535     -0.057178      0.014096      0.625953      0.565796      0.114509      0.111480
 25          0.084374     -0.130906     -0.039858      0.197993      0.223561      0.122128      0.079605
 26          0.087439     -0.078269     -0.011178      0.220653      0.222397      0.135251      0.091023
 27          0.207281     -0.044908      0.032897      0.203100      0.170392     -0.001534      0.133349
 28          0.176298     -0.010792      0.015921      0.256391      0.253702      0.166561      0.062178
 29          1.000000      0.034684      0.058508      0.142641      0.152776      0.016469      0.063469
 30          0.034684      1.000000      0.348207     -0.054293     -0.056998      0.024959     -0.047267
 31          0.058508      0.348207      1.000000      0.037165      0.007761      0.007706      0.029068
 32          0.142641     -0.054293      0.037165      1.000000      0.663027      0.156597      0.116881
 33          0.152776     -0.056998      0.007761      0.663027      1.000000      0.154030      0.107471
 34          0.016469      0.024959      0.007706      0.156597      0.154030      1.000000      0.019125
 35          0.063469     -0.047267      0.029068      0.116881      0.107471      0.019125      1.000000
 36          0.042174     -0.083229      0.000563      0.356786      0.334917      0.144174      0.089879
 37         -0.001151     -0.071433     -0.012791      0.363295      0.359745      0.105691      0.073833
 38         -0.016413     -0.043245     -0.004187      0.140685      0.138533      0.165431      0.002414
 39         -0.008005     -0.133162     -0.020508      0.161594      0.145918      0.035621      0.067274
 40          0.054247      0.006950      0.003712      0.108105      0.136697      0.087349      0.035887
 41         -0.002069      0.068799      0.025946     -0.036687     -0.044204      0.027492     -0.012951
 42          0.037975     -0.063989     -0.006668      0.190013      0.228888      0.062692      0.039486
 43          0.079399     -0.063019     -0.022735      0.338960      0.327494      0.144849      0.074332
 44         -0.006940     -0.020636     -0.021164      0.154816      0.157520      0.084684     -0.001975
 45          0.063217     -0.008236      0.005522      0.155877      0.134315      0.084516      0.042530
 46          0.081119     -0.043112      0.031092      0.231485      0.170902      0.046699      0.133753
 47          0.063032     -0.073133     -0.003838      0.217340      0.190540      0.068993      0.087598
 48          0.012724      0.023330      0.015194      0.036140      0.017425     -0.020040      0.031654
 49          0.025635     -0.039883     -0.003591      0.158315      0.144340      0.057397      0.054781
 50         -0.001930     -0.003305      0.006093      0.052956      0.029891      0.026464      0.024053
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EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX      ALL VARIABLES
                 29            30            31            32            33            34            35

 51        0.013085     -0.030117     -0.005612      0.144430      0.139347      0.032304      0.076395
 52        0.028108     -0.042948     -0.002337      0.181082      0.176535      0.094852      0.051134
 53        0.021840     -0.019567      0.015860      0.189721      0.168810      0.100399      0.050147
 54        0.009453     -0.047028     -0.013162      0.110231      0.119376      0.045405      0.034548
 55        0.013877     -0.035787     -0.000759      0.119729      0.125195      0.038792      0.021851
 56        0.061616     -0.073880      0.009281      0.244612      0.219769      0.069771      0.090935
 57        0.102761     -0.013882      0.014189      0.399780      0.377681      0.138199      0.095055
 58        0.170780     -0.015202      0.044599      0.270260      0.205488      0.034054      0.145288
 59        0.166559     -0.061494      0.024144      0.389871      0.310432      0.121143      0.177044
 60        0.178245     -0.046926      0.031924      0.390798      0.315356      0.157931      0.178469
 61        0.131020     -0.059462      0.017611      0.336361      0.266124      0.111366      0.160244
 62        0.129283     -0.071060      0.013019      0.339648      0.272750      0.060988      0.172306
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EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX      ALL VARIABLES

                  36           37           38           39           40           41           42

  1         0.130524     0.015924     0.175983     0.074021    -0.027713    -0.170471    -0.000912
  2         0.175916     0.168433     0.041245     0.144680     0.047416    -0.090797     0.069744
  3         0.038901     0.046691     0.005110     0.009555     0.033421     0.009124     0.004589
  4         0.053089     0.009444     0.000357    -0.025964     0.037982    -0.018547     0.022606
  5         0.072317     0.005029    -0.031243     0.052593     0.014827     0.025959    -0.026084
  6        -0.091366    -0.065447    -0.020842    -0.052624    -0.024623     0.044654    -0.049170
  7        -0.106631    -0.084316    -0.024785    -0.095300    -0.014123     0.066359    -0.066294
  8        -0.108407    -0.088729    -0.012271    -0.105755    -0.001455     0.047267    -0.051713
  9        -0.151523    -0.124627    -0.027474    -0.168474    -0.029863     0.053639    -0.076050
 10         0.075604     0.064987    -0.007812     0.082989    -0.013664    -0.046914     0.007845
 11        -0.009614    -0.018151    -0.043670     0.077321    -0.082741    -0.042325    -0.049293
 12         0.062846     0.072904     0.060021     0.016771     0.093097     0.046591     0.105494
 13         0.070490     0.070105     0.019699     0.124274     0.027060    -0.023669     0.033323
 14         0.110547     0.069883     0.038597     0.131039     0.026083    -0.035965     0.045473
 15         0.109927     0.107620     0.030856     0.051629     0.079476     0.000806     0.117646
 16         0.134592     0.139876     0.043815     0.049569     0.120643     0.001949     0.138295
 17         0.129248     0.123176     0.047978     0.055541     0.118106    -0.012070     0.129072
 18         0.077155     0.074789     0.016510     0.114738     0.017509    -0.014391     0.052586
 19        -0.005557    -0.014342    -0.009094     0.027377    -0.036593    -0.027460    -0.016401
 20         0.207586     0.480900     0.084255     0.099842     0.079787    -0.018103     0.175625
 21         0.188409     0.422253     0.065300     0.113388     0.078571    -0.013842     0.164978
 22         0.188315     0.184894     0.173916     0.150109     0.057607    -0.056989     0.130112
 23         0.259499     0.290063     0.111918     0.127545     0.120822    -0.025138     0.196726
 24         0.266462     0.318949     0.121114     0.119113     0.120813    -0.027518     0.198353
 25         0.145818     0.150864     0.095746     0.109403     0.127461    -0.027545     0.137989
 26         0.223288     0.190802     0.122363     0.121610     0.097381    -0.040660     0.137010
 27         0.128369     0.071809     0.029975     0.116891     0.328857     0.001968     0.077707
 28         0.122749     0.124070     0.071200     0.022668     0.120772     0.019625     0.110609
 29         0.042174    -0.001151    -0.016413    -0.008005     0.054247    -0.002069     0.037975
 30        -0.083229    -0.071433    -0.043245    -0.133162     0.006950     0.068799    -0.063989
 31         0.000563    -0.012791    -0.004187    -0.020508     0.003712     0.025946    -0.006668
 32         0.356785     0.363295     0.140685     0.161594     0.108105    -0.036687     0.190013
 33         0.334916     0.359745     0.138533     0.145918     0.136697    -0.044204     0.228888
 34         0.144174     0.105691     0.165431     0.035621     0.087349     0.027492     0.062692
 35         0.089879     0.073833     0.002414     0.067274     0.035887    -0.012951     0.039486
 36         1.000000     0.347447     0.204748     0.271075     0.036200    -0.054366     0.139196
 37         0.347447     1.000000     0.175383     0.225942     0.067034    -0.043255     0.202881
 38         0.204748     0.175383     1.000000     0.141446     0.052359    -0.041891     0.092279
 39         0.271075     0.225942     0.141446     1.000000    -0.015888    -0.105232     0.081157
 40         0.036200     0.067034     0.052359    -0.015888     1.000000     0.071826     0.167985
 41        -0.054366    -0.043255    -0.041891    -0.105232     0.071826     1.000000    -0.022906
 42         0.139196     0.202881     0.092279     0.081157     0.167985    -0.022906     1.000000
 43         0.211842     0.334321     0.084687     0.080944     0.128788    -0.043511     0.312713
 44         0.089393     0.254632     0.067000     0.033995     0.049624    -0.065597     0.162079
 45         0.097332     0.104908     0.029785     0.002020     0.026383     0.009988     0.069798
 46         0.210342     0.155705     0.046099     0.108471    -0.038740    -0.016931     0.026493
 47         0.193054     0.168986     0.079346     0.111082     0.007973    -0.047115     0.113811
 48         0.006285    -0.011861    -0.007791    -0.030781    -0.027511     0.016111    -0.019713
 49         0.158909     0.126510     0.066155     0.069019     0.002288    -0.023019     0.087984
 50        -0.000326    -0.003416    -0.029783    -0.007951    -0.036220    -0.000144    -0.007223
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EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX      ALL VARIABLES

                    36            37            38            39            40            41            42

      51       0.151228      0.108830      0.062550      0.095544      0.015018     -0.004694      0.091813
      52       0.150712      0.175533      0.054146      0.078356      0.015544     -0.023231      0.098740
      53       0.172996      0.175150      0.054135      0.079003      0.010085     -0.031464      0.091359
      54       0.170794      0.168174      0.135113      0.145395      0.022438     -0.013777      0.115287
      55       0.107181      0.167995      0.049122      0.077472      0.078273      0.022025      0.168044
      56       0.236608      0.209028      0.077861      0.125979      0.017802     -0.027860      0.137144
      57       0.210312      0.232816      0.091161      0.066196      0.097850     -0.009363      0.154862
      58       0.207492      0.171595      0.038549      0.107331      0.089194     -0.045837      0.065821
      59       0.238353      0.233067      0.007562      0.121612      0.112999     -0.025869      0.086470
      60       0.228773      0.230522      0.009557      0.086921      0.086533     -0.044929      0.087889
      61       0.254951      0.233294      0.043955      0.140154      0.079066     -0.083262      0.077838
      62       0.220581      0.235075      0.012204      0.127733      0.088512     -0.039593      0.074574
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EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX      ALL VARIABLES
                43          44          45          46          47          48          49

  1      -0.037286    0.012472    0.014748    0.042257    0.047229    0.016331    0.067549
  2       0.174033    0.068598    0.101031    0.196544    0.147280    0.038433    0.117740
  3       0.029299    0.016888    0.016554    0.043926    0.007752    0.000545    0.033447
  4       0.057783    0.003017    0.062893    0.086136    0.048539    0.028633    0.033869
  5       0.026427   -0.065995    0.098825    0.256680    0.131982    0.048759    0.088571
  6      -0.087863   -0.023593   -0.071245   -0.148723   -0.086155   -0.007162   -0.070959
  7      -0.118814   -0.025068   -0.078896   -0.170210   -0.124342   -0.009838   -0.080824
  8      -0.087047   -0.032271   -0.046207   -0.159360   -0.107294   -0.018070   -0.088753
  9      -0.112687   -0.053038   -0.056428   -0.167248   -0.110139   -0.017363   -0.074033
 10       0.040768    0.012794    0.020008    0.092926    0.064224    0.015606    0.040843
 11      -0.074114   -0.051982   -0.039258    0.002547    0.009635   -0.026210   -0.011356
 12       0.119661    0.026973    0.092053    0.101026    0.074297    0.041335    0.068297
 13       0.084563    0.003145    0.040427    0.113743    0.104590    0.007042    0.065019
 14       0.058042   -0.003613    0.017303    0.108014    0.075527    0.002202    0.048727
 15       0.180474    0.045927    0.117494    0.155142    0.134156    0.055114    0.094811
 16       0.208797    0.031485    0.135206    0.182780    0.152797    0.057681    0.118696
 17       0.207172    0.028851    0.146779    0.165979    0.135790    0.051949    0.123266
 18       0.081455    0.002188    0.039902    0.130972    0.094108    0.002186    0.067494
 19       0.007664   -0.022919   -0.008719    0.032394    0.034828    0.005118    0.013352
 20       0.253444    0.183219    0.109928    0.164324    0.124578    0.020216    0.106744
 21       0.237455    0.160114    0.104163    0.160856    0.114677    0.007055    0.105224
 22       0.124596    0.050691    0.031000    0.075881    0.099265   -0.015067    0.082623
 23       0.293824    0.1[illegible]3406    0.137821    0.184916    0.169650    0.036626    0.147605
 24       0.299888    0.139834    0.145047    0.188181    0.169981    0.033372    0.148339
 25       0.185679    0.063632    0.060093    0.047585    0.099432   -0.004964    0.074268
 26       0.170448    0.053029    0.082999    0.140132    0.160161    0.013157    0.122054
 27       0.107503    0.007642    0.084783    0.222283    0.122959    0.029161    0.078738
 28       0.189547    0.090002    0.120743    0.120649    0.118426    0.051746    0.075492
 29       0.079399   -0.006940    0.063217    0.081119    0.063032    0.012724    0.025635
 30      -0.063019   -0.020636   -0.008236   -0.043113   -0.073133    0.023330   -0.039883
 31      -0.022735   -0.021164    0.005522    0.031092   -0.003838    0.015194   -0.003591
 32       0.338960    0.154816    0.155877    0.231485    0.217340    0.036140    0.158314
 33       0.327494    0.157520    0.134315    0.170902    0.190540    0.017425    0.144340
 34       0.144849    0.084684    0.084516    0.046699    0.068993   -0.020040    0.057397
 35       0.074332   -0.001975    0.042530    0.133753    0.087598    0.031654    0.054780
 36       0.211842    0.089394    0.097332    0.210342    0.193054    0.006285    0.158909
 37       0.334321    0.254632    0.104908    0.155705    0.168986   -0.011861    0.126510
 38       0.084687    0.057000    0.029785    0.046099    0.079346   -0.007791    0.066155
 39       0.080944    0.033995    0.002020    0.108471    0.111082   -0.030781    0.069019
 40       0.128788    0.049624    0.026383   -0.038740    0.007973   -0.027511    0.002287
 41      -0.043511   -0.065597    0.009988   -0.016931   -0.047115    0.016111   -0.023019
 42       0.312713    0.162079    0.069799    0.025493    0.113811   -0.019713    0.087983
 43       1.000000    0.263466    0.142317    0.108138    0.181037    0.020359    0.145280
 44       0.263466    1.000000    0.069906    0.041995    0.071364    0.002062    0.058869
 45       0.142317    0.069905    1.000000    0.134700    0.113895    0.033990    0.091858
 46       0.108138    0.041995    0.134700    1.000000    0.243303    0.080287    0.187381
 47       0.181037    0.071364    0.113895    0.243304    1.000000   -0.011612    0.236404
 48       0.020359    0.002062    0.033990    0.080287   -0.011612    1.000000    0.025726
 49       0.145281    0.058869    0.091858    0.187382    0.236404    0.025726    1.000000
 50       0.079493    0.033184    0.072762    0.128213    0.107709    0.129857    0.094582
```

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EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX       ALL VARIABLES

                 43           44           45           46           47           48           49

   51         0.118397     0.048511     0.087372     0.190835     0.242688     0.032356     0.166725
   52         0.246348     0.110653     0.093743     0.109414     0.231732    -0.001891     0.170085
   53         0.216901     0.107282     0.107528     0.178973     0.252043     0.023704     0.190157
   54         0.117312     0.048218     0.036152     0.066820     0.088996    -0.066063     0.062649
   55         0.190995     0.068498     0.041656     0.051485     0.097376    -0.021296     0.063095
   56         0.215268     0.059388     0.136325     0.294886     0.305842     0.042127     0.252094
   57         0.269403     0.096663     0.140928     0.160746     0.140150     0.017890     0.136611
   58         0.212638     0.067517     0.140984     0.348346     0.218231     0.072233     0.144453
   59         0.326512     0.108773     0.237332     0.406502     0.274174     0.093127     0.195557
   60         0.348157     0.136206     0.268309     0.415592     0.290437     0.109721     0.210018
   61         0.284231     0.122254     0.224317     0.404732     0.278827     0.084820     0.213196
   62         0.314536     0.108376     0.191920     0.361218     0.252457     0.073646     0.177294
```

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EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX      ALL VARIABLES

                  50           51           52           53           54           55           56

  1         0.022719    -0.011175    -0.049911     0.049681     0.026634    -0.066180     0.053685
  2         0.074751     0.093654     0.074859     0.121767     0.049849     0.050359     0.185875
  3         0.031934     0.021205     0.014203     0.021676     0.006071     0.010456     0.028938
  4         0.023741     0.028017     0.029351     0.036425    -0.003880     0.011209     0.074025
  5         0.128867     0.109039    -0.014015     0.061698    -0.000720    -0.013074     0.166397
  6        -0.052893    -0.063939    -0.031345    -0.048537    -0.005860    -0.024699    -0.110435
  7        -0.071748    -0.084542    -0.044244    -0.066749    -0.022899    -0.045749    -0.144962
  8        -0.047880    -0.076217    -0.051424    -0.076694    -0.038001    -0.046229    -0.125905
  9        -0.033503    -0.064186    -0.053715    -0.075473    -0.055165    -0.054278    -0.137607
 10         0.060833     0.050804     0.026889     0.036608     0.028574     0.011592     0.082268
 11         0.011362     0.006486    -0.006808    -0.001532     0.011306    -0.025326     0.020399
 12         0.049618     0.042648     0.031765     0.046912     0.019669     0.040303     0.094993
 13         0.053679     0.076798     0.034196     0.047318     0.042611     0.029198     0.100098
 14         0.030120     0.058578     0.034839     0.036108     0.041052     0.068792     0.094371
 15         0.105562     0.088698     0.066666     0.087826     0.033287     0.044554     0.152321
 16         0.077366     0.103740     0.091652     0.119546     0.038554     0.069492     0.179067
 17         0.084971     0.089593     0.090239     0.108873     0.047071     0.076059     0.184606
 18         0.061293     0.078417     0.030034     0.045525     0.041988     0.022455     0.113094
 19         0.026367     0.020418     0.013635     0.021460     0.007906    -0.016071     0.015163
 20         0.024183     0.098689     0.109964     0.120550     0.102570     0.139712     0.176798
 21         0.017377     0.086737     0.086209     0.106740     0.104802     0.129600     0.163324
 22        -0.028379     0.094520     0.093786     0.070882     0.118155     0.083905     0.126878
 23         0.038222     0.122733     0.143475     0.137662     0.091363     0.106913     0.204895
 24         0.030393     0.126019     0.154013     0.151757     0.096717     0.119691     0.219414
 25         0.009621     0.058859     0.073377     0.074001     0.080656     0.081396     0.106681
 26         0.031317     0.102277     0.099055     0.109623     0.104828     0.110500     0.195334
 27         0.055926     0.110517     0.013165     0.057645     0.038308     0.054808     0.177450
 28         0.077817     0.068567     0.080478     0.071955     0.012243     0.072000     0.107544
 29        -0.001930     0.013085     0.028108     0.021840     0.009453     0.013877     0.061616
 30        -0.003305    -0.030117    -0.042948    -0.019567    -0.047028    -0.035787    -0.073880
 31         0.006093    -0.005612    -0.002337     0.015860    -0.013162    -0.000759     0.009281
 32         0.052956     0.144430     0.181082     0.189721     0.110231     0.119729     0.244612
 33         0.029891     0.139347     0.176535     0.168810     0.119376     0.125195     0.219769
 34         0.026464     0.032304     0.094852     0.100399     0.045405     0.038792     0.069771
 35         0.024053     0.076395     0.051134     0.050147     0.034548     0.021851     0.090935
 36        -0.000326     0.151228     0.150712     0.172996     0.170794     0.107181     0.236608
 37        -0.003416     0.108830     0.175533     0.175150     0.168174     0.167994     0.209028
 38        -0.029783     0.062550     0.054146     0.054135     0.135113     0.049122     0.077861
 39        -0.007951     0.095544     0.078356     0.079003     0.145395     0.077472     0.125979
 40        -0.036220     0.015018     0.015544     0.010085     0.022438     0.078273     0.017802
 41        -0.000144    -0.004694    -0.023231    -0.031464    -0.013777     0.022025    -0.027860
 42        -0.007223     0.091813     0.098740     0.091359     0.115287     0.168044     0.137144
 43         0.079493     0.118397     0.246348     0.216901     0.117312     0.190995     0.215268
 44         0.033184     0.048511     0.110653     0.107282     0.048218     0.068498     0.059388
 45         0.072762     0.087372     0.093743     0.107527     0.036151     0.041655     0.136325
 46         0.128213     0.190835     0.109414     0.178973     0.066820     0.051485     0.294886
 47         0.107709     0.242688     0.231732     0.252043     0.088996     0.087376     0.305842
 48         0.129857     0.032356    -0.001891     0.023704    -0.066063    -0.021296     0.042127
 49         0.094582     0.166726     0.170085     0.190157     0.062649     0.063096     0.252094
 50         1.000000     0.131704     0.066532     0.084438    -0.077917    -0.031707     0.105777
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EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX      ALL VARIABLES
                  50            51            52            53            54            55            56

  51        0.131704      1.000000      0.183921      0.191484      0.112960      0.078743      0.253716
  52        0.066532      0.183921      1.000000      0.266294      0.087754      0.087401      0.200527
  53        0.084438      0.191484      0.266294      1.000000      0.083031      0.080570      0.218227
  54       -0.077917      0.112960      0.087754      0.083031      1.000000      0.155394      0.120784
  55       -0.031706      0.078742      0.087401      0.080570      0.155394      1.000000      0.178004
  56        0.105777      0.253716      0.200527      0.218227      0.120784      0.178004      1.000000
  57        0.035151      0.090868      0.135334      0.132145      0.098175      0.118755      0.162816
  58        0.139201      0.167145      0.101107      0.192875      0.066904      0.059363      0.252732
  59        0.209895      0.196228      0.178134      0.252070      0.074629      0.089064      0.309887
  60        0.228380      0.197610      0.173825      0.257387      0.053721      0.076963      0.318096
  61        0.198455      0.192793      0.155569      0.252924      0.080014      0.067782      0.315998
  62        0.175630      0.186363      0.172302      0.224453      0.090280      0.096298      0.278001
```

EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX   ALL VARIABLES

	57	58	59	60	61	62
1	-0.013212	0.085117	-0.043168	0.029447	0.154037	-0.025553
2	0.134068	0.262024	0.303879	0.322197	0.319905	0.275028
3	0.040080	0.056102	0.066251	0.072107	0.051168	0.055881
4	0.104008	0.147486	0.154293	0.186309	0.147535	0.106938
5	0.045998	0.349427	0.443814	0.429994	0.366016	0.369689
6	-0.100730	-0.157033	-0.243293	-0.238245	-0.197418	-0.176381
7	-0.131472	-0.205459	-0.300487	-0.295874	-0.244072	-0.226452
8	-0.118821	-0.178103	-0.256336	-0.244384	-0.214139	-0.191879
9	-0.128907	-0.209115	-0.233452	-0.224690	-0.211706	-0.199212
10	0.029344	0.064771	0.129181	0.108306	0.113228	0.110653
11	-0.089766	-0.035996	-0.026776	-0.053838	-0.027240	-0.020170
12	0.121582	0.174529	0.199438	0.193642	0.148805	0.151254
13	0.048486	0.183750	0.218059	0.201112	0.181929	0.204585
14	0.055818	0.170280	0.158983	0.154516	0.164267	0.154368
15	0.209138	0.233187	0.327509	0.343096	0.269261	0.273740
16	0.219640	0.254585	0.362393	0.375377	0.293634	0.294692
17	0.211064	0.249380	0.349673	0.354684	0.289427	0.281167
18	0.060316	0.176463	0.206288	0.189936	0.167262	0.190822
19	-0.033915	0.040786	0.053158	0.045003	0.045335	0.045592
20	0.204908	0.186242	0.251259	0.252860	0.226201	0.244845
21	0.202519	0.190803	0.246685	0.249547	0.216188	0.236379
22	0.140811	0.059083	0.090095	0.090775	0.080525	0.070365
23	0.316650	0.235730	0.349173	0.348027	0.284816	0.289090
24	0.331365	0.229162	0.340014	0.338181	0.283015	0.289176
25	0.146837	0.077630	0.110914	0.121078	0.108767	0.105265
26	0.177290	0.152923	0.224236	0.216848	0.215030	0.163450
27	0.128007	0.326496	0.349331	0.314817	0.301385	0.290209
28	0.186839	0.211165	0.283264	0.295311	0.227428	0.210481
29	0.102761	0.170780	0.166559	0.178245	0.131020	0.129283
30	-0.013882	-0.015202	-0.061494	-0.046926	-0.059462	-0.071060
31	0.014189	0.044599	0.024144	0.031924	0.017611	0.013019
32	0.399780	0.270260	0.389871	0.390798	0.336361	0.339649
33	0.377681	0.205488	0.310432	0.315356	0.266124	0.272750
34	0.138199	0.034054	0.121143	0.157931	0.111366	0.060988
35	0.095055	0.145288	0.177044	0.178469	0.160244	0.172306
36	0.210312	0.207492	0.238353	0.228773	0.254951	0.220581
37	0.232816	0.171595	0.233067	0.230522	0.233294	0.235075
38	0.091161	0.038549	0.007562	0.009557	0.043955	0.012204
39	0.066196	0.107330	0.121612	0.086921	0.140154	0.127733
40	0.097850	0.089194	0.112999	0.086533	0.079066	0.088512
41	-0.009363	-0.045837	-0.025869	-0.044929	-0.083262	-0.039593
42	0.154862	0.065821	0.086470	0.087889	0.077838	0.074574
43	0.269403	0.212638	0.326512	0.348157	0.284231	0.314536
44	0.096663	0.067517	0.108773	0.136206	0.122254	0.108376
45	0.140928	0.140984	0.237332	0.268309	0.224317	0.191920
46	0.160746	0.348346	0.406502	0.415592	0.404732	0.361218
47	0.140150	0.218231	0.274174	0.290437	0.278827	0.252457
48	0.017890	0.072233	0.093127	0.109721	0.084820	0.073646
49	0.136611	0.144454	0.195557	0.210018	0.213196	0.177294
50	0.035151	0.139201	0.209895	0.228380	0.198455	0.175630

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EMP-FACTOR ANALYSIS NINTH GRADE

CORRELATION MATRIX      ALL VARIABLES

                  57            58            59            60            61            62

     51       0.090868      0.167145      0.196228      0.197610      0.192795      0.186364
     52       0.135334      0.101107      0.178134      0.173825      0.155569      0.172302
     53       0.132145      0.192875      0.252070      0.257387      0.252924      0.224453
     54       0.098175      0.066904      0.074629      0.053721      0.080014      0.090280
     55       0.118755      0.059360      0.089064      0.076963      0.067782      0.096299
     56       0.162816      0.252732      0.309887      0.318096      0.315998      0.278001
     57       1.000000      0.186775      0.291040      0.298061      0.252747      0.234158
     58       0.186775      1.000000      0.593961      0.604917      0.597976      0.611883
     59       0.291040      0.593961      1.000000      0.841399      0.738046      0.711785
     60       0.298061      0.604917      0.841399      1.000000      0.774725      0.688451
     61       0.252747      0.597976      0.738046      0.774725      1.000000      0.671101
     62       0.234158      0.611883      0.711785      0.688451      0.671101      1.000000
```

7.3 Varimax Factors for Ninth Grade Judgmentally Scaled Student Variables

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EMP-FACTOR ANALYSIS NINTH GRADE

VARIMAX FACTORS

                        1              2              3              4              5              6              7

    3            0.037351       0.066618      -0.023190      -0.043526      -0.035935      -0.002374       0.057716
    4            0.094168       0.312712      -0.041468      -0.009992      -0.075327       0.021175      -0.020418
    7           -0.129457      -0.247056       0.147024       0.243300       0.066769      -0.008971      -0.051005
   10           -0.016357       0.142057      -0.080556       0.062363       0.147705      -0.134836       0.111750
   12            0.087603       0.499643       0.011209      -0.075894       0.095657       0.029776       0.014319
   13            0.041464       0.130074      -0.064018      -0.830327      -0.007139       0.012642       0.061780
   14            0.068429      -0.028599      -0.025479      -0.542940       0.143178      -0.012014       0.000046
   15            0.174375       0.602393      -0.085645      -0.162972       0.000586       0.059342       0.055816
   16            0.208568       0.735730      -0.120320      -0.081852       0.008096      -0.001643       0.089079
   17            0.179717       0.694696      -0.119011      -0.007258       0.041373      -0.008239       0.066468
   18            0.049286       0.183417      -0.078134      -0.758806      -0.010582      -0.011203       0.090034
   19           -0.048057       0.069152      -0.064209      -0.248486      -0.016268      -0.017837      -0.037714
   20            0.196724       0.090878      -0.091007      -0.029480       0.043359       0.124136       0.845566
   21            0.173478       0.136669      -0.070984      -0.121934       0.026120       0.090011       0.842961
   22            0.122179       0.170487      -0.076124      -0.075438       0.079722      -0.096228       0.273274
   23            0.801454       0.230723      -0.092164      -0.145672      -0.015749       0.018953       0.160114
   24            0.829572       0.169967      -0.108498      -0.050330       0.012802       0.028926       0.152706
   25            0.165821       0.298960      -0.043461      -0.038192       0.096241       0.065124       0.049296
   26            0.130408       0.309511      -0.177998      -0.010066       0.141489      -0.088815       0.162905
   28            0.170170       0.5345[illegible]9      -0.041568      -0.049283      -0.073773       0.166291      -0.005411
   31            0.009172       0.048509       0.033039       0.058109       0.120498      -0.070270       0.026132
   32            0.796737       0.149699      -0.182612      -0.033394       0.061841       0.091142       0.087555
   33            0.747471       0.162596      -0.143463       0.001116       0.081221       0.135619       0.096239
   34            0.073809       0.074481      -0.128233       0.029638      -0.202516       0.141530      -0.006025
   35            0.045584       0.224149      -0.129934      -0.028350       0.114567      -0.179658       0.150606
   36            0.339033      -0.011148      -0.235814      -0.035965       0.300378      -0.025082       0.125620
   37            0.298307      -0.033586      -0.153672      -0.003587       0.217758       0.264007       0.542253
   38            0.072819      -0.001670      -0.010091      -0.007051       0.156744       0.035254       0.021382
   39            0.136061      -0.060016      -0.055348      -0.198932       0.399852      -0.059437       0.048386
   40            0.089023       0.188644       0.079929      -0.045924       0.128620       0.229054      -0.033188
   41           -0.002550      -0.036224      -0.028079       0.000878       0.014888      -0.204641       0.046912
   42            0.130454       0.161174      -0.056138      -0.017907       0.361509       0.491325       0.041519
   43            0.259456       0.170758      -0.246564      -0.022834       0.138878       0.576959       0.123102
   44            0.075265      -0.035708      -0.049239       0.027523      -0.058631       0.635235       0.197842
   45            0.074163       0.172924      -0.254784       0.041122      -0.113793       0.113660       0.097507
   46            0.133987       0.128272      -0.442324      -0.099579       0.069651      -0.201677       0.161529
   47            0.086903       0.092004      -0.619230      -0.060412       0.053778       0.020126       0.017874
   48            0.032137       0.075361       0.043246       0.032361      -0.021684      -0.002227       0.007845
   49            0.082486       0.055697      -0.521388      -0.014678      -0.000415      -0.019731       0.043356
   50           -0.038237       0.081902      -0.255854      -0.100546      -0.253698       0.113782      -0.041754
   51            0.047831       0.014536      -0.529611      -0.069955       0.141153      -0.038657       0.007777
   52            0.110969      -0.016217      -0.532876       0.026431      -0.036467       0.235103      -0.002785
   53            0.084511       0.016486      -0.565872       0.021274      -0.034580       0.172085       0.034869
   54            0.050726       0.008989      -0.128981       0.011753       0.556082      -0.002733       0.067162
   55            0.041470       0.041080      -0.114590      -0.033080       0.562877       0.230928       0.059515
   56            0.121185       0.120912      -0.560681      -0.060843       0.252362      -0.021737       0.086767
   57            0.452688       0.181201      -0.166053       0.038792       0.064988       0.125468       0.075307
```

EMP-FACTOR ANALYSIS NINTH GRADE

VARIMAX FACTORS

	8	9	10	11	12	13
3	-0.054740	0.068929	-0.276000	-0.717832	0.065734	-0.087119
4	0.191931	-0.112648	-0.486690	0.098005	0.007675	-0.127237
7	-0.507318	0.260566	0.129647	-0.058121	0.045517	0.070136
10	0.011606	-0.221245	0.286697	-0.542878	-0.107672	0.157443
12	-0.318487	0.185088	0.010753	0.062496	0.101858	0.168593
13	-0.077101	-0.002157	0.056937	0.037349	-0.009533	-0.004742
14	0.341246	0.053475	-0.002949	-0.050952	0.126471	0.133707
15	-0.056339	-0.051861	-0.125904	0.004811	-0.050579	0.035518
16	0.029520	-0.017577	0.004316	-0.045133	-0.030690	-0.010608
17	0.191884	-0.017734	0.072373	-0.065476	-0.019701	0.029218
18	-0.217966	-0.042366	0.029259	0.002913	-0.043354	-0.050831
19	-0.646004	-0.134608	0.014865	-0.022162	-0.018535	-0.082395
20	0.067829	0.042927	0.005094	-0.015064	0.030080	0.018286
21	0.018292	0.036573	0.001272	-0.009236	0.003356	-0.031171
22	0.199130	-0.102639	0.185215	0.014208	0.374406	-0.189769
23	0.021745	0.019453	0.059619	-0.006238	0.007524	-0.025314
24	0.075488	0.030578	0.066643	-0.011200	0.020041	-0.001871
25	0.051347	0.026794	0.390657	0.026916	0.223395	-0.074853
26	0.156998	-0.020259	0.246826	-0.114563	0.292624	-0.040657
28	-0.047097	0.097220	-0.091892	0.019039	0.221348	0.088175
31	0.006211	0.060890	-0.603522	-0.108679	0.036834	0.046417
32	0.004483	-0.037090	-0.046758	0.001971	0.099975	0.049015
33	0.033136	-0.024592	0.009049	0.014166	0.109954	-0.004565
34	-0.027797	0.192019	0.001952	-0.092168	0.629985	-0.048453
35	-0.021727	-0.074644	-0.046979	0.365434	-0.004959	0.036291
36	-0.014360	-0.176747	-0.044378	-0.037630	0.376761	0.086557
37	-0.062749	-0.096500	0.000333	-0.021756	0.184563	0.036792
38	-0.023805	-0.077157	-0.026733	0.074780	0.653152	0.036908
39	0.001336	-0.366230	0.062476	-0.060152	0.263737	0.075179
40	0.159512	0.433242	0.111793	-0.065256	0.100813	-0.125801
41	-0.054960	0.721084	-0.056612	0.015003	-0.026617	0.065294
42	0.074416	0.078486	0.101216	0.030777	-0.008510	-0.034214
43	-0.000048	0.001474	0.062611	-0.011274	0.030148	0.022917
44	-0.034327	-0.148983	-0.019214	-0.019257	0.082525	0.079800
45	-0.003598	0.075865	-0.092508	0.094264	0.068460	0.103738
46	0.014754	-0.099527	-0.172194	0.006874	0.026224	0.262762
47	0.009508	-0.067474	0.037590	0.030002	0.041531	-0.040671
48	-0.007003	-0.000744	-0.018043	0.091030	-0.000585	0.733106
49	0.006737	0.017683	0.048559	-0.026226	0.037405	0.013178
50	0.075989	-0.013465	0.036258	-0.147062	-0.031638	0.512725
51	0.039976	0.044736	0.033584	0.011190	0.002044	0.097344
52	-0.044412	-0.007106	0.038767	-0.001629	0.050970	-0.140405
53	-0.059207	-0.033548	-0.025680	-0.017818	0.059272	-0.053480
54	-0.107257	-0.044363	-0.038040	0.044458	0.121490	-0.180085
55	0.117944	0.203124	-0.031312	-0.016091	-0.088210	-0.014644
56	0.076112	-0.002474	-0.018936	-0.014651	0.000877	0.112620
57	0.032237	0.050848	-0.071679	0.015747	0.092384	-0.002780

7.4 Student Questionnaire Index Means, Sigmas and Intercorrelations for Judgmentally Scaled Variables*

*The List of Indices and Variables are given in Appendix V.

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EDUCATIONAL MODELS PROJECT
INTH GRADE

TOTAL SAMPLE


THE NUMBER OF OBSERVATIONS IS    3021476.

VARIABLE         SUMS         SUMS OF SQUARES          MEAN            SIGMA(N)          SIGMA(N-1)
    1       -644909.3906     14122550.8750          -0.2134            2.1514            2.1514
    2       -326026.7305     14934091.0000          -0.1079            2.2206            2.2206
    3       -726354.0000      4744951.8125          -0.2404            1.2299            1.2299
    4      -1463890.8125     24199560.0000          -0.4845            2.7883            2.7883
    5       -445926.4453     10048061.6250          -0.1476            1.8176            1.8176
    6       -993121.9141     32037842.7500          -0.3287            3.2397            3.2397
    7       -473336.9414      7648580.1875          -0.1567            1.5833            1.5833
    8        -27215.7522     41683768.0000          -0.0090            3.7143            3.7143
    9       -118794.3652      3296127.5000          -0.0393            1.0437            1.0437
   10        -93739.1934      3159565.7500          -0.0310            1.0221            1.0221
   11         -7591.1537        31085.0098          -0.0025            0.1014            0.1014
   12        115575.4209      3346848.1250           0.0383            1.0518            1.0518
   13        208188.0801      3793808.6563           0.0689            1.1184            1.1184
   14        527418.9688      6720083.8750           0.1746            1.4811            1.4811
   15       -113478.3223      3240573.9688          -0.0376            1.0349            1.0349
   16        -12519.3336      3035780.9375          -0.0041            1.0024            1.0024
   17        -47915.5630      3008931.1563          -0.0159            0.9978            0.9978
   18        -44298.7427      3035355.7188          -0.0147            1.0022            1.0022
   19        -22721.7004      3028342.0625          -0.0075            1.0011            1.0011
   20        478521.4531      1803839.9844           0.1584            0.7563            0.7563
```

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EDUCATIONAL MODELS PROJECT
INTH GRADE

CORRELATION MATRIX      TOTAL SAMPLE

                   1            2            3            4            5            6            7

  1         1.000000     0.326037     0.330785     0.334290     0.247842     0.518442     0.412067
  2         0.326037     1.000000     0.239476     0.362158     0.323917     0.506126     0.314519
  3         0.330785     0.239476     1.000000     0.502921     0.174307     0.368256     0.339752
  4         0.334290     0.362158     0.502921     1.000000     0.234361     0.439381     0.353005
  5         0.247842     0.323917     0.174307     0.234361     1.000000     0.244774     0.203507
  6         0.518442     0.506126     0.368256     0.439381     0.244774     1.000000     0.473963
  7         0.412067     0.314519     0.339752     0.353005     0.203507     0.473963     1.000000
  8         0.353402     0.512369     0.268384     0.544551     0.303424     0.486468     0.287556
  9         0.046340     0.047655     0.065200     0.118598     0.065083    -0.005076     0.227071
 10         0.224798     0.274739     0.161870     0.261124     0.205700     0.299552     0.210103
 11         0.124042     0.374429     0.140989     0.293610     0.324989     0.143300     0.115333
 12        -0.148606    -0.320930    -0.114254    -0.189248    -0.053124    -0.201892    -0.147699
 13        -0.213233    -0.381704    -0.148044    -0.212716    -0.244567    -0.256716    -0.204745
 14        -0.254176    -0.341598    -0.179206    -0.217793    -0.274223    -0.279669    -0.240360
 15         0.135748     0.124080     0.080529     0.138296     0.119599     0.093893     0.119233
 16         0.026846    -0.020218    -0.003684     0.024761     0.080819    -0.051467    -0.002970
 17         0.192800     0.234394     0.151332     0.148288     0.140024     0.268569     0.258782
 18         0.073464     0.293984     0.064713     0.107619     0.083795     0.194433     0.072904
 19        -0.018494     0.008936    -0.032187    -0.039750    -0.131192    -0.029293    -0.037549
 20         0.031741     0.053752     0.036266    -0.056471    -0.061756     0.095605     0.033942


                   8            9           10           11           12           13           14

  1         0.353402     0.046340     0.224798     0.124042    -0.148606    -0.213233    -0.254176
  2         0.512369     0.047655     0.274739     0.374429    -0.320930    -0.381704    -0.341598
  3         0.268384     0.065200     0.161870     0.140989    -0.114254    -0.148044    -0.179206
  4         0.544551     0.118598     0.261124     0.293610    -0.189248    -0.212716    -0.217793
  5         0.303424     0.065083     0.205700     0.324989    -0.053124    -0.244567    -0.274223
  6         0.486468    -0.005076     0.299552     0.143300    -0.201892    -0.256716    -0.279669
  7         0.287556     0.227071     0.210103     0.115333    -0.147699    -0.204745    -0.240360
  8         1.000000     0.074192     0.356782     0.464747    -0.251129    -0.277128    -0.252920
  9         0.074192     1.000000     0.153236     0.043379    -0.049685    -0.072242    -0.103888
 10         0.356782     0.153236     1.000000     0.181707    -0.141342    -0.177928    -0.224882
 11         0.464747     0.043379     0.181707     1.000000    -0.270596    -0.238204    -0.200423
 12        -0.251129    -0.049685    -0.141342    -0.270596     1.000000     0.298950     0.220555
 13        -0.277128    -0.072242    -0.177928    -0.238204     0.298950     1.000000     0.549683
 14        -0.252920    -0.103888    -0.224882    -0.200423     0.220555     0.549683     1.000000
 15         0.161913     0.077046     0.108428     0.169298    -0.108574    -0.130253    -0.162626
 16        -0.011417     0.014800     0.035728     0.107408    -0.039190    -0.058439    -0.104154
 17         0.134926     0.019359     0.118921    -0.005150    -0.016355    -0.111685    -0.123614
 18         0.195788     0.021207     0.125392     0.090224    -0.102649    -0.146371    -0.142728
 19        -0.043005    -0.007469    -0.120047    -0.004248     0.031908    -0.026577     0.012045
 20        -0.088628    -0.115120    -0.037274    -0.120865     0.038747     0.046351     0.035513
```

EDUCATIONAL MODELS PROJECT
INTH GRADE

CORRELATION MATRIX TOTAL SAMPLE

	15	16	17	18	19	20
1	0.135748	0.026846	0.192800	0.073464	-0.018494	0.031741
2	0.124080	-0.020218	0.234394	0.293984	0.008936	0.053752
3	0.080529	-0.003684	0.151332	0.064713	-0.032187	0.036266
4	0.138296	0.024761	0.148288	0.107619	-0.039750	-0.056471
5	0.119599	0.080819	0.140024	0.083795	-0.131192	-0.061756
6	0.093893	-0.051467	0.268569	0.194433	-0.029293	0.095605
7	0.119233	-0.002970	0.258782	0.072904	-0.037549	0.033942
8	0.161913	-0.011417	0.134926	0.195788	-0.043005	-0.088628
9	0.077046	0.014800	0.019359	0.021207	-0.007469	-0.115120
10	0.108428	0.035728	0.118921	0.125392	-0.120047	-0.037274
11	0.169298	0.107408	-0.005150	0.090224	-0.004248	-0.120865
12	-0.108574	-0.039190	-0.016355	-0.102649	0.031908	0.038747
13	-0.130253	-0.058439	-0.111685	-0.146371	-0.026577	0.046351
14	-0.162626	-0.104154	-0.123614	-0.142728	0.012045	0.035513
15	1.000000	0.353800	0.052262	-0.036351	-0.039254	-0.072446
16	0.353800	1.000000	-0.017971	-0.063359	-0.043253	-0.122101
17	0.052262	-0.017971	1.000000	0.083577	-0.099631	0.110789
18	-0.036351	-0.063359	0.083577	1.000000	0.053343	0.043621
19	-0.039254	-0.043253	-0.099631	0.053343	1.000000	0.014812
20	-0.072446	-0.122101	0.110789	0.043621	0.014812	1.000000

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